

**CLASS 454, VENTILATION****SECTION I - CLASS DEFINITION**

This is the parent class for apparatus and processes for supplying air to and removing it from enclosures, for distributing and circulating the air therein, or for preventing its contamination.

**SECTION II - REFERENCES TO OTHER CLASSES****SEE OR SEARCH CLASS:**

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| <p>2, Apparel, subclasses 171+ for head coverings (e.g., hats) which may include ventilation.</p> <p>4, Baths, Closets, Sinks, and Spittoons, appropriate subclasses for ventilation of devices forming the subject matter of that class, particularly, subclasses 209+ and 306 for ventilation of urinals; subclasses 347+ for ventilation of flush closets; and subclasses 472, 475, 477, and 482 for ventilation of dry closets.</p> <p>5, Beds, subclasses 706+ for ventilation of a mattress.</p> <p>34, Drying and Gas or Vapor Contact With Solids, appropriate subclasses for ventilation processes and apparatus combined with added steps or means to cause drying or gas or vapor contact with solids.</p> <p>36, Boots, Shoes, and Leggings, subclass 3 for ventilation of boots or shoes.</p> <p>52, Static Structures (e.g., Buildings), subclasses 198+ for structure forming an enclosure for or a cover over a room or compartment and having a fluid guiding port in an outer barrier communicating between the space and ambient, subclass 200 for an enclosure located on and within the periphery of a roof and having an open bottom or passage communicating with the space beneath the roof (e.g., cupola), subclasses 204.5+ for passageways which traverse a barrier and which allow passage of air, subclass 218 for a flue with gaseous fluid directing features, and subclass 219 for a flue connection to building structures.</p> <p>62, Refrigeration, appropriate subclasses for ventilated rooms or chambers in combination with cooling or refrigeration means specialized to refrigeration. The mere inclusion of a cooler for the air or means subjecting the air to air-liquid contact is not considered a means specialized to refrigeration.</p> | <p>95, Gas Separation: Processes, for processes of gas separation, per se, in which dust or other contaminants are removed from air.</p> <p>96, Gas Separation: Apparatus, for apparatus for gas separation, per se, in which dust or other contaminants are removed from air.</p> <p>105, Railway Rolling Stock, subclasses 350+ for passenger car constructions tending to lessen the dust contents of the air in the vicinity of car doors and windows.</p> <p>114, Ships, subclass 187 for steamboat stacks and chimneys specially adapted to use on vessels and subclasses 211+ for ventilating devices specific to ships and involving the structure of the ship.</p> <p>126, Stoves and Furnaces, appropriate subclasses for the combination of ventilating and heating wherein significant heating structure (i.e., more than a nominal recitation such as a broadly recited "heating means") is claimed. See specifically subclasses 21+ for ventilated ovens, subclasses 67+ for heating stoves provided with means for heating and circulating a current of air, subclass 80 for heating stoves provided with special ventilating attachments or features, subclasses 99+ for furnaces which heat air in an enclosing case or jacket to be distributed to points remote from the furnace, subclass 113 for the combination of an air moistener with a hot air furnace, subclass 198 for oven doors provided with means for ingress and egress of air, subclass 279 for ventilating platforms for stoves and furnaces, subclass 287.5 for fusible release-type stove or furnace dampers, subclass 293 for the combination of a smoke-controlling damper and a ventilating damper which are interconnected so that the movement of one operates to move the other, subclasses 299+ for stove hoods designed to carry off odors from kitchen ranges, subclass 312 for stovepipe ventilation, subclass 313 for air moistening attachments to stovepipes, subclass 316 for a combined stove pipe thimble and ventilator, and subclass 508 for a fireplace with a room humidifier.</p> <p>128, Surgery, subclass 205.26 for ventilating chambers usable by a patient such as oxygen tents and hyperbaric chambers.</p> <p>135, Tent, Canopy, Umbrella, and Cane, subclasses 93+ for ventilation of a portable structure (e.g., tent).</p> <p>137, Fluid Handling, subclass 216 for vents in fluid lines to prevent backflow (e.g., antisiphon devices).</p> |
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- 160, Flexible or Portable Closure, Partition, or Panel, for ventilating devices (1) in the form of panels in which a flexible fabric or other flexible sheet material forms the panel portions; (2) in the form of panel units formed of plural strips, slats, or panels interconnected for relative motion (excluding those connected only by a common operator or mounted on a common support); (3) panels in the form of portable partitions, and (4) parts (1) - (3) combined with each other or with rigid closures or other rigid panels. Ventilators, as above, combined with additional means (as pumps, valves, baffles, etc.) to cause, control, or direct the flow of air are in Class 454, Ventilation. Closures and panel units in the form of grilles, shutters, or registers, whether of the stationary or noninterconnected pivoted-vane type, have been treated as rigid panels.
- 165, Heat Exchange, subclasses 59, 234+, and 248+, for the combination of air distribution means with specific heat exchange means adapted to heat or cool the air and subclass 60 for the combination of an air moistening device with a specific heat exchange means adapted to heat or cool a chamber.
- 210, Liquid Purification or Separation, subclasses 163+ for a grated fluid inlet.
- 217, Wooden Receptacles, subclass 42 for ventilated crates and subclass 74 for ventilated barrels.
- 236, Automatic Temperature and Humidity Regulation, for automatically operating mechanisms for controlling temperature or humidity, per se. Class 236 does not include claims to the devices or systems controlled.
- 237, Heating Systems, appropriate subclasses and particularly subclasses 46+ for the combination of ventilating and heating wherein significant heating structure (i.e., more than a nominal recitation such as a broadly recited "heating means") is claimed.
- 239, Fluid Sprinkling, Spraying, and Diffusing, subclasses 34+ for slow diffusers, per se, and subclass 270 for a nozzle having an air supply means to the operator.
- 261, Gas and Liquid Contact Apparatus, appropriate subclasses for air moistening devices, per se, and subclasses 127+ for heating and cooling devices combined with moisteners for the air. Devices including significant ventilating structure and excluding specific heating or cooling structure will be found in Class 454.
- 280, Land Vehicles, subclasses 847+ for devices for protecting the occupants of a vehicle or the vehicle itself from dust and mud incident to the use of that vehicle.
- 296, Land Vehicles: Bodies and Tops, subclasses 84.1+ for vehicle windshields.
- 399, Electrophotography, subclasses 92+ for internal machine environment having a forced air circulation and subclasses 246+ for sprayed liquid developer applications.
- 404, Road Structure, Process, or Apparatus, subclasses 25+ for a pavement with a load bearing vault cover-closure which may include openings or vents.
- 415, Rotary Kinetic Fluid Motors or Pumps, for a blower, per se.
- 416, Fluid Reaction Surfaces (i.e., Impellers), for a fan, per se.
- 417, Pumps, for a motor driven blower, per se.

#### SUBCLASSES

#### 1

#### CHIMNEY OR STACK:

This subclass is indented under the class definition. Subject matter relating to a generally vertical, projecting, conduit section having an uppermost portion which opens to a surrounding environment, whereby air or products of combustion can flow between a ventilated space and the surrounding environment.

- (1) Note. This and indented subclasses provide a residual location for chimney or stack structure not properly classified in other classes.
- (2) Note. A mere opening, for example in a roof, is not considered to be a vertical conduit section.
- (3) Note. The vertical conduit section usually projects above a roof such as that of a building.
- (4) Note. This subclass does not include attic ventilators nor ceiling outlets ducted directly through the roof since they lack a "substantially vertically extending conduit section."

## SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), subclass 218 for building structure with a flue having a gaseous fluid-directing feature which is not located in the chimney stacktop structure or cowl, subclass 219 for a connection between a flue and building structure, subclasses 245+ for a static structure including a barrier (e.g., wall, etc.) which has its opposite faces both curvilinear and substantially parallel.
- 110, Furnaces, subclass 184 for a metal smokestack combined with particular solid material combustion apparatus in a locomotive or portable boiler.
- 114, Ships, subclass 187 for steamboat stacks or chimneys adapted for use on vessels and having particular ship structure.
- 126, Stoves and Furnaces, subclasses 285+ for chimney or stack dampers, per se, not incorporated in chimneytop or stacktop structure and subclasses 307+ for miscellaneous smoke flues combined with particular stove or furnace apparatus provided for the application of heat.
- 285, Pipe Joints or Couplings, subclasses 42+ for a pipe with a roof junction which includes flashing.

**2****Vehicle:**

This subclass is indented under subclass 1. Subject matter wherein the ventilated space is in a device for transporting passengers, goods, or equipment.

- (1) Note. This subclass provides a residual location for vehicle chimney or stack structure not properly classified in other classes.

## SEE OR SEARCH CLASS:

- 110, Furnaces, subclass 184 for a metal smokestack combined with particular solid material combustion apparatus in a locomotive or portable boiler.
- 114, Ships, subclass 187 for steamboat stacks or chimneys adapted for use on vessels and having particular ship structure.

**3****Chimneytop or stacktop structure (e.g., cowl):**

This subclass is indented under subclass 1. Subject matter comprising structure at an uppermost end of the vertical conduit section.

- (1) Note. Cowl structure is included in this subclass.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 339+, for structure at the end of an outlet conduit section. See, in particular, subclass 368.

## SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), subclass 200 for cupolas, subclass 218 for flues with gas inlets and internal gas directing features (see the notes to that subclass), and subclass 244 for a cap which is mounted on and covers the exposed terminal edge of a barrier which encloses a space, e.g., chimney top guards.

**4****Cap closure:**

This subclass is indented under subclass 3. Subject matter comprising a cover which can be positioned over the opening in the vertical conduit's uppermost section to stop flow there-through of air or products of combustion.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 94, for a railcar, bus, or trailer having an exterior cap closure for a vent.
- 275, for an inlet airway having a specific cover or shield for an exterior vent opening.
- 347+, for an outlet airway having an air pump and which may include a readily moveable cover.
- 355, for an outlet airway having an air pump and including a moveable access cover.
- 356, for an outlet airway having an air pump and including an exterior neck with an enlarged, weather resistant cover.
- 358+, for other outlet airways which may include a readily moveable cover.

368+, for other outlet airways with a specific cover or shield for an exterior vent opening.

SEE OR SEARCH CLASS:

138, Pipes and Tubular Conduits, sub-classes 89+ for pipes and tubular conduits with closures and plugs.

## 5 **Pivoted:**

This subclass is indented under subclass 4. Subject matter wherein the cover rotates about an axis.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

30, for a pivoted outlet air current regulator used in a chimney or stacktop.

363, for a pivoted damper panel or cover used in an outlet airway.

## 6 **Plural, separately pivoted portions:**

This subclass is indented under subclass 5. Subject matter wherein the cover comprises at least two parts, each part rotating independently about the same or different fixed axes.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

31, for plural pivoted air current regulating means in a chimney or stacktop structure.

351, and 352, for plural damper panels in an outlet airway

## 7 **Having remote control:**

This subclass is indented under subclass 5. Subject matter comprising means for rotating the cover about the fixed axis from a location distant from the cover.

- (1) Note. Pressure of air or products of combustion within the vertical conduit section, which directly acts on the cover to rotate it open and closed, does not constitute remote cap pivoting means for the purposes of this subclass.

SEE OR SEARCH CLASS:

236, Automatic Temperature and Humidity Regulation, appropriate subclasses for an automatically operated mechanism for controlling temperature or humid-

ity which does not include the device or system controlled.

## 8 **Inlet and outlet:**

This subclass is indented under subclass 3. Subject matter comprising separate passages for directing air or products of combustion to and from the ventilated space.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

103+, for a railcar, bus, or trailer having both inlet and outlet airways.

141+, for other vehicles having both inlet and outlet airways.

237+, for static structures (e.g., buildings) having both inlet and outlet airways, particularly, subclass 242, for a rooftop, unitary inlet and outlet housing having both inlet and outlet airways, which housing is not associated with a chimney or stack.

## 9 **Having air current responsive adjustment means (e.g., wind vane, etc.):**

This subclass is indented under subclass 8. Subject matter comprising a means which alters a position or operation of the structure in reaction to a change in (1) flow of natural air (i.e., wind) or (2) flow of air or products of combustion through the vertical conduit section.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

11, for an air current responsive adjustment means associated with chimney or stacktop structure which includes an inlet only (no claimed outlet) to a ventilated space.

17, for an air current responsive adjustment means associated with chimney or stacktop structure which includes a rotary means in the air current (e.g., fan etc.).

20, for an air current responsive adjustment means associated with chimney or stacktop structure which includes an outlet only (no claimed inlet) to a ventilated space.

- 10 Inlet:**  
This subclass is indented under subclass 3. Subject matter comprising a passage for directing air to the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 107, for railcars, buses, or trailers having inlet airways.
  - 143+, for other vehicles having inlet airways.
  - 254+, for static structures (e.g., buildings) having inlet airways.
- 11 Having air current responsive adjustment means (e.g., wind vane, etc.):**  
This subclass is indented under subclass 10. Subject matter comprising a means which alters a position or operation of the structure in reaction to a change in (1) flow of natural air (i.e., wind) or (2) flow of air or products of combustion through the vertical conduit section.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 9, for an air current responsive adjustment means associated with chimney or stacktop structure which includes both an inlet and outlet to a ventilated space.
  - 17, for an air current responsive adjustment means associated with chimney or stacktop structure which includes a rotary means in the air current (e.g., fan etc.).
  - 20, for an air current responsive adjustment means associated with chimney or stacktop structure which includes an outlet only (no claimed inlet) to a ventilated space.
- 12 With means for mounting on brick-type chimney:**  
This subclass is indented under subclass 3. Subject matter comprising means uniting the structure to an uppermost end of a brick or ceramic vertical conduit section (i.e., chimney).
- 13 Chimneytop structure extends within chimney:**  
This subclass is indented under subclass 12. Subject matter wherein a portion of the structure is located in an interior portion of the brick or ceramic conduit section.
- 14 Means for mounting to inner wall:**  
This subclass is indented under subclass 13. Subject matter wherein the uniting means fastens the structure to an interior surface of the brick or ceramic conduit section.
- 15 With rotary means in air current (e.g., fan, etc.):**  
This subclass is indented under subclass 3. Subject matter comprising a unidirectionally rotating member which acts on or is acted on by (1) flow of natural air (i.e., wind) or (2) flow of air or products of combustion through the vertical conduit section.
- (1) Note. The member may be referred to as a rotor, wheel, bucket wheel, rotary fan, etc.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 101, for a wind-operated recirculating fan associated with a railcar, bus, or trailer.
  - 106, for other railcar, bus, or trailer wind-operated fans associated with an inlet and outlet airway.
  - 113, for other railcar, bus, or trailer wind-operated fans associated with an inlet airway only.
  - 117, for a railcar, bus, or trailer having a wind-operated fan associated with an outlet airway.
  - 240, for a wind-operated air pump associated with a building having both an inlet and an outlet airway.
- 16 Driven by external power source:**  
This subclass is indented under subclass 15. Subject matter wherein the member is unidirectionally rotated by a means other than (1) flow of natural air (i.e., wind) or (2) flow of air or products of combustion through the vertical conduit section.

- (1) Note. The means to unidirectionally rotate the member is commonly an electric or pneumatic motor.
- 17 Having air current responsive adjustment means (e.g., wind vane, etc.):**  
This subclass is indented under subclass 15. Subject matter comprising a means which alters the position or operation of the structure or a part thereof in reaction to a change in (1) flow of natural air (i.e., wind) or (2) flow of air or products of combustion through the vertical conduit section.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 9, for an air current responsive adjustment means associated with chimney or stacktop structure which includes both an inlet and outlet to a ventilated space.
- 11, for an air current responsive adjustment means associated with chimney or stacktop structure which includes an inlet only (no claimed outlet) to a ventilated space.
- 18 Cage-type blade set:**  
This subclass is indented under subclass 15. Subject matter wherein the unidirectionally rotating member comprises a hollow cylinder with two or more strip-like (blade) structures extending along the periphery thereof, which structures act on or are acted on by (1) flow of natural air (i.e., wind) or (2) flow of air or products of combustion through the vertical conduit section.
- (1) Note. A cage-type blade set is often referred to as a turbine.
- 19 Including additional blade set:**  
This subclass is indented under subclass 18. Subject matter further comprising a different group of rotating member (blade) structures acting on or being acted upon by (1) flow of natural air (i.e., wind) or (2) flow of air or products of combustion through the vertical conduit.
- 20 Having air current responsive adjustment means:**  
This subclass is indented under subclass 3. Subject matter comprising a means which alters the position or operation of the structure or a part thereof in reaction to a change in (1) flow of natural air (i.e., wind) or (2) flow of air or products of combustion through the vertical conduit section.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 9, for an air current responsive adjustment means associated with chimney or stacktop structure which includes both an inlet and outlet to a ventilated space.
- 11, for an air current responsive adjustment means associated with chimney or stacktop structure which includes an inlet only (no claimed outlet) to a ventilated space.
- 17, for an air current responsive adjustment means associated with chimney or stacktop structure which includes a rotary means in the air current (e.g., fan etc.).
- 21 Wind vane:**  
This subclass is indented under subclass 20. Subject matter wherein the structure or a portion thereof rotates to maintain a particular orientation relative to changing natural air (i.e., wind) flow direction.
- (1) Note. The structure usually rotates about a vertical axis.
- 22 With air current inducing jet:**  
This subclass is indented under subclass 21. Subject matter comprising a nozzle which ejects a high velocity flow stream to cause air or products of combustion to flow through the vertical conduit section.
- (1) Note. The high velocity flow stream is usually diverted natural air current (i.e., wind).

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 39+, for other chimney or stacktop structures which use current inducing jets to induce flow in the outlet airway.
- 116, for a railcar, bus, or trailer which uses a current inducing jet (often wind caused by the movement of the vehicle) to induce flow in the outlet airway.
- 163, for other vehicles which use a current inducing jet (often wind caused by the movement of the vehicle) to induce flow in the outlet airway.

**23 Centered within induced air current:**

This subclass is indented under subclass 22. Subject matter wherein the nozzle and its ejected flow stream lie in the middle of the air or products of combustion being caused to flow.

**24 Shield:**

This subclass is indented under subclass 21. Subject matter wherein the rotating structure is a generally vertical deflector which shelters the vertical conduit section's uppermost portion from direct exposure to the natural air current (i.e., wind).

- (1) Note. A generally horizontal, angled deflector which lies directly over an upwardly facing opening of the vertical conduit is not included in this subclass.

**25 Hood having outlet opening perpendicular to wind:**

This subclass is indented under subclass 21. Subject matter wherein the structure comprises a cover means over the opening in the vertical conduit's uppermost section, the cover means rotating to maintain an air or products of combustion exhaust opening therein facing at a right angle to the natural air flow direction.

**26 Current regulator:**

This subclass is indented under subclass 20. Subject matter wherein the means varies flow of air or products of combustion through the vertical conduit section.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 27, for a current regulator which is not air current responsive.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclasses 285+ for a flow regulating damper, per se.

**27 Having readily movable air current regulating means:**

This subclass is indented under subclass 3. Subject matter wherein the structure comprises a means which is easily shiftable to alter flow of air or products of combustion through the vertical conduit section.

- (1) Note. A means held in a single fixed position by a separate movable screw or bolt or other permanent-type tool actuated fastener is not considered "readily movable."

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 26, for a chimneytop or stacktop structure having air current regulating means which is air current responsive.
- 347+, and 358, for other types of outlet ventilators with a readily movable louver, damper, or cover.
- 355, for an air pump outlet airway with a movable access cover which also may affect the flow of air.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclasses 285+ for chimney or stack dampers, per se, not incorporated in chimneytop or stacktop structure.

**28 With temperature sensitive release:**

This subclass is indented under subclass 27. Subject matter wherein the shiftable means moves in reaction to temperature.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 257, for a building inlet airway including an emergency smoke or fire responsive valve.

- 342, for a building outlet airway including an air pump and having means for controlling or dealing with smoke.
- 357, for other building outlet airways having means for controlling or dealing with smoke.
- 369, for fusible release controlled fire dampers.
- SEE OR SEARCH CLASS:
- 126, Stoves and Furnaces, subclass 287.5 for fusible release dampers for stoves or furnaces.
- 169, Fire Extinguishers, particularly subclasses 42 and 56+ for fire extinguishing apparatus responsive to smoke or fire.
- 236, Automatic Temperature and Humidity Regulation, various subclasses for an automatic mechanism for controlling temperature which does not include the device or system controlled.
- 29 Continuously horizontal panel:**  
This subclass is indented under subclass 27. Subject matter wherein the shiftable means comprises a multiposition plate which is maintained parallel to the horizon while in use and while motion is being imparted to it.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 348, and 362, for continuously horizontal damper panels used with outlet airways.
- 30 Pivoted:**  
This subclass is indented under subclass 27. Subject matter wherein the shiftable means rotates about a fixed axis.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 5, for pivoted chimney or stacktop cap closures.
- 363, for a pivoted damper panel in an outlet airway.
- 31 Plural:**  
This subclass is indented under subclass 30. Subject matter having two such shiftable means which rotate about the same or different fixed axes.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 6, for plural pivoted chimney or stacktop closures.
- 351, and 352, for plural damper panels in an outlet airway.
- 32 T-top:**  
This subclass is indented under subclass 3. Subject matter wherein the structure comprises two arms which, with the vertical conduit section, form a T-shape.
- 33 Spiral or plural stacked rings:**  
This subclass is indented under subclass 3. Subject matter wherein the structure comprises (1) spaced-apart, helically-arranged strips or (2) rings spaced apart and positioned one above another.
- 34 Four-side outlets with shield:**  
This subclass is indented under subclass 3. Subject matter wherein the structure comprises exhaust openings 90 degrees apart with a deflector across each opening to prevent back draft.
- 35 Spaced cap:**  
This subclass is indented under subclass 3. Subject matter comprising a cover above and at a distance from the uppermost portion of the vertical pipe or conduit section.
- 36 And spaced shield:**  
This subclass is indented under subclass 35. Subject matter comprising a structure which surrounds, is located at a distance from, and which shelters an area immediately above the uppermost portion of the vertical conduit section.
- (1) Note. The structure usually protects the uppermost portion of the conduit section from direct exposure to natural air currents (i.e., wind).
- 37 And skirt deflector extending outwardly from chimney or stack:**  
This subclass is indented under subclass 36. Subject matter wherein the vertical conduit section has a flange surrounding and stretching away therefrom for guiding air, products of combustion, or water.



- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
38, for other skirt deflectors in combination with a spaced cap.
- 38 And skirt deflector extending outwardly from chimney or stack:**  
This subclass is indented under subclass 35. Subject matter wherein the vertical conduit section has a flange surrounding and stretching away therefrom for guiding air, products of combustion, or water.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
37, for a structure comprising a spaced shield and a skirt deflector extending outwardly from a chimney or stack.
- 39 Having air current inducing jet:**  
This subclass is indented under subclass 3. Subject matter comprising a nozzle for ejecting a high velocity fluid stream which causes flow of air or products of combustion through the vertical conduit section.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
22+, for a chimney or stacktop which uses a diverted natural air current to induce flow in the outlet airway.  
116, for a railcar, bus, or trailer which uses a current inducing jet (often wind caused by movement of the vehicle) to induce flow in the outlet airway.  
163, for other vehicles which use a current inducing jet (often wind caused by the movement of the vehicle) to induce flow in the outlet airway.
- 40 Plural, in-series jets:**  
This subclass is indented under subclass 39. Subject matter comprising two such nozzles, the high velocity fluid streams issuing from the nozzles acting on the air or products of combustion one after another in sequence.
- 41 Having liquid drain:**  
This subclass is indented under subclass 1. Subject matter comprising means to remove liquid from the vertical conduit section.
- 42 Having internal air current guide:**  
This subclass is indented under subclass 1. Subject matter comprising a surface within the vertical conduit section which straightens or diverts flow of air or products of combustion through the conduit.
- (1) Note. A mere vertical conduit wall is not considered to be an internal current guide. Particular flow guiding wall structure must be claimed for inclusion in this subclass.
- SEE OR SEARCH CLASS:  
126, Stoves and Furnaces, subclasses 285+ for chimney or stack dampers, per se, not incorporated in chimneytop or stacktop structure.
- 43 Having flue heater:**  
This subclass is indented under subclass 1. Subject matter comprising means to heat the air or products of combustion to increase their flow rate through the vertical conduit section.
- 44 Having lining or sleeve:**  
This subclass is indented under subclass 1. Subject matter comprising (1) an interior covering or coating for the vertical conduit section or (2) a member which encases the vertical conduit section.
- SEE OR SEARCH CLASS:  
285, Pipe Joints or Couplings, subclasses 47+ for a joint or coupling with an insulated casing, lining, or protector.
- 45 Including breech opening:**  
This subclass is indented under subclass 44. Subject matter comprising a side opening in a lower part of the vertical conduit section for entrance of air or products of combustion.
- SEE OR SEARCH CLASS:  
126, Stoves and Furnaces, subclasses 500+ for an open recess fireplace in a chimney.
- 46 Pressurized air lining:**  
This subclass is indented under subclass 44. Subject matter comprising a layer of air which encases the vertical conduit section, the layer of air having a pressure above ambient.

- 47 Axially connected chimney or stack sections:**  
This subclass is indented under subclass 44. Subject matter comprising at least two parts which are attached together end-to-end to form the vertical conduit section.

SEE OR SEARCH CLASS:

- 285, Pipe Joints or Couplings, subclasses  
47+ for a joint or coupling with an insulated casing, lining, or protector.

- 48 EXTERIOR VAULT OR MANHOLE COVER:**

This subclass is indented under the class definition. Subject matter comprising a means positioned over an outdoor aperture through which a person may enter a sewer, boiler, pipe, conduit, drain, or underground or burial chamber.

- (1) Note. The means usually acts to prevent outside debris from entering the aperture.

SEE OR SEARCH CLASS:

- 404, Road Structure, Process, or Apparatus, subclasses 25+ for a pavement with a load bearing vault cover-closure which may include openings or vents.

- 49 WORKSTATION VENTILATOR (E.G., HOOD, OFFTAKE, ETC.):**

This subclass is indented under the class definition. Subject matter particularly adapted to exhausting fumes, vapors, steam, dust, or other undesirable air pollutants from a task area where such pollutants have been generated.

- (1) Note. The task area may be a welding, painting, industrial process, or other area where a pollutant generating job is performed.
- (2) Note. Subject matter comprising specific details of the pollutant generating device beyond those relating to ventilation structures are properly classified with the device.
- (3) Note. Means for conducting away naturally occurring, normally present particles from an area so as to render the area

particle free (e.g., clean room, etc.) is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 168+, for a mine ventilator.  
197, for a window related, bed or couch ventilator.

SEE OR SEARCH CLASS:

- 4, Baths, Closets, Sinks, and Spittoons, particularly subclasses 209+ for bathroom ventilators.
- 15, Brushing, Scrubbing, and General Cleaning, particularly subclass 300.1 for a cleaning machine using air blast or suction devices.
- 30, Cutlery, particularly subclasses 41.5, 124+, and 133 for a cutlery device combined with various types of material disposal means.
- 83, Cutting, particularly subclasses 98+ for cutting devices having fluid current product handling means.
- 96, Gas Separation: Apparatus, for gas separation apparatus.
- 104, Railways, particularly subclass 52 for a smoke remover for use in roundhouses and train sheds over locomotive smoke stacks.
- 126, Stoves and Furnaces, particularly subclasses 299+ for a stove hood.
- 144, Woodworking, particularly subclasses 252.1+ for a device for catching and confining the flying shavings and sawdust from a cutting machine and for conveying them away from the machine.
- 266, Metallurgical Apparatus, particularly subclasses 158 and 159 for metallurgical apparatus with hood or offtake means for handling gases exhausted by treating means.
- 451, Abrading, subclasses 453 and 456 for a particle collector or a dust hood with air exhausting means for drawing off dust developed in a grinding operation.

- 50 Spray booth:**

This subclass is indented under subclass 49. Subject matter wherein the task area is particularly adapted to coating an object with an atom-

ized material such as paint or electrostatic particles.

- (1) Note. A workstation ventilator in combination with specific coating means is properly classified elsewhere. See the Search Class Note below.

SEE OR SEARCH THIS CLASS, SUB-CLASS:  
339+, for a ventilation outlet airway.

SEE OR SEARCH CLASS:

- 55, Gas Separation, particularly Digest 46 for spray booths in which a gas is separated from a mixture.  
118, Coating Apparatus, particularly subclass 326 for a hood or offtake for waste material, and see the Search Class note of subclass 326 for a further discussion of class lines between this class and Class 118 (see (1) Note above); also see digest 7 for a hood.  
399, Electrophotography, subclasses 246+ for sprayed liquid developer applications.

**51 Having air inlet separate from access opening:**

This subclass is indented under subclass 50. Subject matter comprising an inlet passage for admitting air to the task area which passage is distinct from an aperture allowing admittance to the area by personnel or by the object to be coated.

- (1) Note. A mere doorway or window is not considered to be an inlet passage.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 57+, for a covered workbench chamber having an air inlet separate from an access opening.  
66, for a workstation ventilator, in general, which has an inlet airway.

**52 Ceiling inlet:**

This subclass is indented under subclass 51. Subject matter wherein the inlet passage admits air to the task area through a structural barrier above the area.

**53 With outlet air treatment means:**

This subclass is indented under subclass 50. Subject matter comprising means to change a characteristic of the air being exhausted from the task area.

- (1) Note. For example, this subclass includes means for removing noxious spray particles such as paint from the air being exhausted.

SEE OR SEARCH CLASS:

- 96, Gas Separation: Apparatus, appropriate subclasses for means for removing dust and other contaminants from air, per se.

**54 With means for liquid contact:**

This subclass is indented under subclass 53. Subject matter comprising means directly exposing the air being exhausted to a liquid.

**55 Spraying nozzle:**

This subclass is indented under subclass 54. Subject matter comprising an aperture through which the liquid is forcibly ejected as a fine jet of dispersed droplets to be directly exposed to the exhausting air.

**56 Covered workbench chamber (e.g., fume hood, etc.):**

This subclass is indented under subclass 49. Subject matter wherein the task area is within a cabinet-like enclosure which allows admittance by an operator to work on a task.

- (1) Note. The enclosure need not enclose the task area on all sides, but if it does, it must provide an entryway for the work arms of an operator to work on a task.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, particularly subclasses 299+ for a stove hood.  
422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, particularly subclass 104 for a laboratory housing or hood, per se.

**57 Having air inlet separate from access opening:**

This subclass is indented under subclass 56. Subject matter comprising an inlet passage for admitting air to the task area, which passage is distinct from an aperture which allows admittance to the area by the operator.

- (1) Note. A device having an inlet passage which is adjacent the aperture is included in this subclass provided the airway is physically separated from the aperture.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 51+, for a spray booth having an air inlet separate from an access opening.  
66, for a workstation ventilator, in general, which has an inlet airway.

**58 Including flow adjustment means:**

This subclass is indented under subclass 57. Subject matter comprising means to alter direction or rate of air flow through the inlet passage.

**59 Responsive to position of access door:**

This subclass is indented under subclass 58. Subject matter wherein the means alters the direction or rate of air flow dependent upon positioning of a closure for the aperture which allows admittance to the task area by the operator.

**60 And air outlet through access opening:**

This subclass is indented under subclass 57. Subject matter wherein air is exhausted from the task area by way of the aperture which allows admittance to the task area by the operator.

**61 Having outlet airway flow adjustment means:**

This subclass is indented under subclass 56. Subject matter comprising a passage for exhausting air from the task area and further comprising means to alter direction or rate of flow of air flowing through the passage.

**62 Plural airways with adjustable distribution means:**

This subclass is indented under subclass 61. Subject matter comprising two or more passages for exhausting air from the task area and further comprising means to alter amounts of the air exhausting through one of the passages relative to another of the passages.

- (1) Note. The two or more passages may connect to a common outlet or suction pipe.

**63 Movable:**

This subclass is indented under subclass 49. Subject matter comprising means for relocating the exhausting means or an air collecting portion thereof from one position to another during use.

- (1) Note. While retractable or pivotable hoods are considered proper for this subclass, generally movable planar doors for a stationary hood are not proper.

**64 Having sliding, communicating, airway duct sections:**

This subclass is indented under subclass 63. Subject matter comprising two or more connected air carrying conduit sections which move relative to one another by a smooth, gliding motion.

SEE OR SEARCH CLASS:

- 137, Fluid Handling, subclass 580 for a fluid handling system with a sliding joint between moveable parts of the system.  
285, Pipe Joints or Couplings, subclass 298 for sliding, communicating pipe sections.

**65 Having canopy exhaust hood:**

This subclass is indented under subclass 63. Subject matter comprising a cover-like structure above the task area which includes means to collect and exhaust air from the area.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 67, for a workstation ventilator having a nonmoveable canopy exhaust hood.

**66 Having inlet airway:**

This subclass is indented under subclass 49. Subject matter comprising an inlet passage for admitting air to the task area.

- (1) Note. Subject matter which merely recirculates air within the task area is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 51+, for a spray booth having an air inlet separate from an access opening.  
57+, for a covered workbench chamber having an air inlet separate from an access opening.

**67 Having canopy exhaust hood:**

This subclass is indented under subclass 49. Subject matter comprising a cover-like structure above the task area which includes means to collect and exhaust air from the area.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 65, for a workstation ventilator having a moveable, canopy exhaust hood.

**68 ELEVATOR:**

This subclass is indented under the class definition. Subject matter comprising features peculiar to admitting air to, exhausting air from, or circulating air about a (ventilated) space in a device vertically raised and lowered to transport passengers, goods, or equipment.

SEE OR SEARCH CLASS:

- 187, Elevator, Industrial Lift Truck, or Stationary Lift for Vehicle, appropriate subclasses for particular elevator structure.

**69 VEHICLE (E.G., AUTOMOBILE, ETC.):**

This subclass is indented under the class definition. Subject matter comprising features peculiar to admitting air to, exhausting air from, or circulating air about a (ventilated) space in a device for transporting passengers, goods, or equipment.

- (1) Note. Subject matter relating to a mobile home which is essentially stationary is not included in this and indented sub-

classes. However, subject matter relating to a self-propelled or towed recreational vehicle which is essentially mobile is included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 2, for a chimney which admits air to or exhausts air from a ventilated space in a vehicle.  
68, for elevator ventilation structure.

**70 Pressure regulation:**

This subclass is indented under the class definition. Apparatus including means responsive to air conditions either in or outside of an enclosure or the air condition in the supply system for the enclosure to maintain a predetermined pressure in said enclosure and/or a difference in pressure between said enclosure and the outside atmosphere.

- (1) Note. Systems which maintain enclosures under air pressure but having no air condition responsive automatic controls are in other appropriate subclasses of this class, e.g., those having differential air input and discharge.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 238, for pressure regulation of a structure which includes both inlet and outlet airways.  
255, for pressure regulation of a structure which includes an inlet airway.  
340, for pressure regulation of a structure which includes an outlet airway.

SEE OR SEARCH CLASS:

- 34, Drying and Gas or Vapor Contact With Solids, subclasses 92, 287, 402, and 558 for processes and apparatus for maintaining pressure and/or vacuum peculiar to that class and subclass 242 for chamber seals there provided for.  
128, Surgery, subclass 205.26 for pressure chambers for therapeutic treatment, including hyperbaric and decompression chambers.  
137, Fluid Handling, subclasses 494+, particularly subclasses 505+, for regulating valves of general utility.

- 165, Heat Exchange, subclasses 234+ for pressure control of a heated and/or cooled aircraft cabin where specific heating or cooling means are included.
- 244, Aeronautics and Astronautics, subclass 59 for aircraft cabin pressure control combined with aircraft engine supercharging or with specific aircraft structure.
- 405, Hydraulic and Earth Engineering, subclasses 8+ and 11+ for caissons.
- 417, Pumps, for pumps and pump regulators responsive to pump effect including such devices where the enclosure is defined by name and no specific relationship between the enclosure and the pump or fan is claimed.
- 418, Rotary Expansible Chamber Devices, for rotary expansible chamber devices, per se.
- 71 Ventilation of aircraft cabin:**  
This subclass is indented under subclass 70. Subject matter wherein the ventilated area is the interior, or compartment thereof, of an aircraft.
- SEE OR SEARCH CLASS:  
165, Heat Exchange, subclasses 234+ for pressure control of a heated and/or cooled aircraft cabin where specific heating or cooling means are included.
- 72 Auxiliary control system:**  
This subclass is indented under subclass 71. Subject matter wherein a secondary control system is utilized in the event of failure of the primary control system.
- (1) Note. Included in this subclass are auxiliary pressure relief systems.
- 73 Mechanical operation of control system (e.g., by bellows or diaphragm, etc.):**  
This subclass is indented under subclass 71. Subject matter wherein the operation of the control system, including the responsive means, is by primarily mechanical devices (e.g., bellows, diaphragm, piston, valve, etc.).
- 74 Control system having electrical or electronic component:**  
This subclass is indented under subclass 71. Subject matter including an electrical or electronic component which is essential to the operation, or activation thereof, of the automatic control system.
- 75 Having automatic control means:**  
This subclass is indented under subclass 69. Subject matter comprising (1) means to sense a condition or change of a condition and (2) means responsive to the sensing means to effect a change in flow of the air.
- (1) Note. The condition or change of condition may be related to air temperature or moisture content, for example.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
70+, for automatic pressure regulation of a vehicle ventilating system.  
229, for automatic control of a forced recirculation ventilating system.  
238, for automatic pressure regulation of a ventilating system having both inlet and outlet airways.  
239, for automatic control of a ventilating system having both inlet and outlet airways.  
255, for automatic pressure regulation of a ventilating system having an inlet airway.  
256, for automatic control of a ventilating system having an inlet airway.  
340, for automatic pressure regulation of a ventilating system having an outlet airway.
- SEE OR SEARCH CLASS:  
236, Automatic Temperature and Humidity Regulation, for such systems, per se.
- 76 Aircraft:**  
This subclass is indented under subclass 69. Subject matter wherein the transporting device is particularly adapted to atmospheric flight.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
71+, for automatic pressure regulation of an aircraft cabin.

- 77 Freight:**  
This subclass is indented under subclass 76. Subject matter wherein the ventilated space is particularly adapted for transporting goods, equipment, or livestock.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 79, for ventilated cargo holds on-board a ship.
- 88, for ventilation of a freight-carrying railcar or trailer.
- 118, for ventilation of other freight-carrying vehicles.
- SEE OR SEARCH CLASS:
- 217, Wooden Receptacles, subclass 42 for ventilated crates and subclass 74 for ventilated barrels, per se.
- 220, Receptacles, subclasses 1.5+ for freight containers, per se.
- 78 Waterborne:**  
This subclass is indented under subclass 69. Subject matter wherein the transporting device is particularly adapted to navigation on or in a body of water.
- SEE OR SEARCH CLASS:
- 114, Ships, subclasses 211+ for ventilating devices specific to ships and involving the structure of the ship.
- 79 Freight:**  
This subclass is indented under subclass 78. Subject matter wherein the ventilated space is particularly adapted for transporting goods, equipment, or livestock.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 77, for ventilated aircraft cargo cabins.
- 88, for ventilation of a freight-carrying railcar or trailer.
- 118, for ventilation of other freight-carrying vehicles.
- SEE OR SEARCH CLASS:
- 217, Wooden Receptacles, subclass 42 for ventilated crates and subclass 74 for ventilated barrels, per se.
- 220, Receptacles, subclasses 1.5+ for freight containers, per se.
- 80 Nonperishable bulk foodstuff (e.g., grain ship):**  
This subclass is indented under subclass 79. Subject matter wherein the ventilated space is particularly adapted for transporting grain or other unpackaged and unrefrigerated foodstuffs.
- 81 Porthole ventilator:**  
This subclass is indented under subclass 78. Subject matter wherein the ventilating means is, or is used in conjunction with, an embrasure in the side of a vessel.
- 82 With moisture deflector or drain:**  
This subclass is indented under subclass 78. Subject matter comprising means to divert, channel, or convey liquid away from the air admitting, exhausting, or circulating means.
- (1) Note. Means to dehumidify the air is not included in this subclass.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 146, for an exterior cowl ventilator with a moisture deflector or drain.
- 156+, for means to dehumidify air admitted to a ventilated space in a vehicle.
- 83 Railcar, bus, or trailer:**  
This subclass is indented under subclass 69. Subject matter wherein the transporting device is particularly adapted to (1) run on a rail, (2) carry a large number of people, or (3) be drawn by a propelling vehicle.
- (1) Note. Subject matter relating to a mobile home which is essentially stationary is not included in this and indented subclasses. However, subject matter relating to a self-propelled or towed recreational vehicle which is essentially mobile is included in this subclass.
- 84 Locomotive cab:**  
This subclass is indented under subclass 83. Subject matter wherein the transporting device is particularly adapted for self-propulsion on a rail and wherein the ventilated space is a compartment for a driver of the device.

**85 Condensation preventer (e.g., defroster, etc.):**

This subclass is indented under subclass 84. Subject matter comprising means for preventing water, in either solid or liquid form, which has been removed from the air, from accumulating on a surface.

- (1) Note. The condensate is usually prevented from accumulating on a window.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 93, for a condensation preventer specific to a railcar, bus, or trailer, in general, and not restricted to a locomotive cab.  
121, for a condensation preventer specific to a vehicle, in general.  
198, for a condensation preventer for a window in a static structure, (e.g., building).

**86 Including dust guard for cab window opening:**

This subclass is indented under subclass 83. Subject matter comprising means for deflecting cinders, grit, or other particles from an air and light admitting aperture in a barrier of the driver compartment (i.e., a cab window).

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 96, for dust guards for windows in railcars, buses, and trailers, generally, and not specific to locomotive cabs.

SEE OR SEARCH CLASS:

- 280, Land Vehicles, subclasses 847+ for devices for protecting the occupants of a vehicle or the vehicle itself from dust and mud incident to the use of that vehicle.

**87 Sleeping car:**

This subclass is indented under subclass 83. Subject matter wherein the transporting device is particularly adapted to ride on a rail and wherein the ventilated space comprises sleeping accommodations for human passengers.

**88 Freight:**

This subclass is indented under subclass 83. Subject matter wherein the ventilated space is particularly adapted for transporting goods, equipment, or livestock.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 77, for ventilated aircraft cargo cabins.  
79, for ventilated cargo holds on-board a ship.  
118, for ventilation of other freight-carrying vehicles.

SEE OR SEARCH CLASS:

- 217, Wooden Receptacles, subclass 42 for ventilated crates and subclass 74 for ventilated barrels, per se.  
220, Receptacles, subclasses 1.5+ for freight containers, per se.

**89 Ice-bunker closure (e.g., for refrigerated railcar):**

This subclass is indented under subclass 88. Subject matter comprising a selectively movable or removable cover for a hatch of an ice-carrying bin in the transporting device, which closing includes means for admitting air.

- (1) Note. Ice is usually placed through the hatch and into the bin to cool a space in the transporting device.

**90 Refrigerated or heated:**

This subclass is indented under subclass 88. Subject matter wherein the ventilated space is cooled below or warmed above ambient temperature.

- (1) Note. See the "Search Class" notes in the class definition for a discussion of the lines between this class and the various heating and refrigerating classes.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 91, for an ice-bunker closure.

**91 With air pump:**

This subclass is indented under subclass 90. Subject matter comprising an apparatus for adding energy to and moving the air.



- (1) Note. The air moving apparatus is usually a fan.
- 92 With air pump:**  
This subclass is indented under subclass 88. Subject matter comprising an apparatus for adding energy to and moving the air.
- (1) Note. The air moving apparatus is usually a fan.
- 93 Condensation preventer (e.g., defroster, etc.):**  
This subclass is indented under subclass 84. Subject matter comprising means for preventing water, in either solid or liquid form, which has been removed from the air, from accumulating on a surface.
- (1) Note. The condensate is usually prevented from accumulating on a window.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 85, for a condensation preventer specific to a locomotive cab.
- 121, for a condensation preventer specific to a vehicle, in general.
- 198, for a condensation preventer for a window in a static structure.
- 94 Having exterior cap closure for vent:**  
This subclass is indented under subclass 83. Subject matter comprising an outside aperture which leads to the ventilated space and further comprising a structure which swings, slides, rotates, or otherwise moves between a first position permitting airflow through the aperture and a second position covering the aperture and preventing airflow therethrough.
- (1) Note. Pivoting and sliding roof vents are included in this subclass.
- (2) Note. A damper door placed within an air passage connecting the ventilated space with atmosphere is not included in this subclass.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 4+, for a cap closure for a chimney or stacktop.
- 129, for a vehicle sunroof.
- 275, for an inlet airway having a specific cover or shield for an exterior vent opening.
- 347+, for an outlet airway having an air pump and which may include a readily moveable cover.
- 355, for an outlet airway having an air pump and including a moveable access cover.
- 356, for an outlet airway having an air pump and including an exterior neck with an enlarged, weather resistant cover.
- 358+, for other outlet airways which may include a readily moveable cover.
- 367+, for other outlet airways with a specific cover or shield for an exterior vent opening.
- 95 Having window or entry-door ventilation structure:**  
This subclass is indented under subclass 83. Subject matter comprising means to admit air to, exhaust air from, or circulate air about the ventilated space combined with (1) a light admitting structure in a barrier of the ventilated space (i.e., window) or (2) a structure which swings, slides, rotates, or otherwise moves between two positions, one closing a passenger entrance to the ventilated space and the other allowing such entrance (i.e., door).
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 128+, for window ventilation in other types of vehicles.
- 195, for ventilation combined with a door in a static structure (e.g., building).
- 196+, for ventilation combined with a window in a static structure (e.g., building).
- 96 Including dust guard for window opening:**  
This subclass is indented under subclass 95. Subject matter comprising means for deflecting dust, cinders, or other material from an air and light admitting aperture (i.e., a window opening) in a barrier of the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 86, for dust guards for locomotive cab windows.

- 96, for dust guards for windows in rail-cars, buses, and trailers, generally, and not specific to locomotive cabs.

SEE OR SEARCH CLASS:

- 280, Land Vehicles, subclasses 847+ for devices for protecting the occupants of a vehicle or the vehicle itself from dust and mud incident to the use of that vehicle.

**97 Inside of window:**

This subclass is indented under subclass 96. Subject matter wherein the deflecting means is positioned on the ventilated space side of the air and light admitting aperture.

**98 Outside of window:**

This subclass is indented under subclass 96. Subject matter wherein the deflecting means is positioned outside the ventilated space.

**99 Having forced recirculation:**

This subclass is indented under subclass 83. Subject matter comprising an air moving apparatus which contacts and directly forces air from one location within the ventilated space to another separate location within the space.

- (1) Note. Recirculating flow must directly contact and be driven by an air moving apparatus to be included in this and indented subclasses. Subject matter wherein recirculating flow is merely "induced" by a separate forced flow is not included in this and indented subclasses.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 139+, for forced recirculation in other types of vehicles.  
205, for recirculation combined with window features.  
228+, for forced recirculation within a static structure, (e.g., building).

**100 Having forced recirculation means alone:**

This subclass is indented under subclass 99. Subject matter wherein the air moving apparatus contacts and directly moves only existing air within the ventilated space.

- (1) Note. Subject matter including means for also introducing air from outside of the ventilated space into the space is excluded from this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 140, for other types of vehicles having forced recirculation of vehicle air alone.  
230+, for a static structure (e.g., building) having forced recirculation of ventilating air alone.

**101 Wind-operated fan:**

This subclass is indented under subclass 100. Subject matter comprising a device for adding energy to and moving the air, which device is driven by moving air.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 15, for a wind-operated fan associated with chimney or stacktop structure.  
106, for other railcar, bus, or trailer wind-operated fans associated with an inlet and outlet airway.  
113, for other railcar, bus, or trailer wind-operated fans associated with an inlet airway only.  
117, for a railcar, bus, or trailer having a wind-operated fan associated with an outlet airway.  
240, for a wind-operated air pump associated with a building having both an inlet and an outlet airway.

**102 Wheel-axle operated fan:**

This subclass is indented under subclass 100. Subject matter comprising a device for adding energy to and moving the air, which device is driven by a rotating shaft which supports a wheel of the transporting device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 106, for a railcar, bus, or trailer having both an inlet and an outlet airway and including wheel-axle operated fans.  
114, for a railcar, bus, or trailer having a wheel-axle operated fan associated with an inlet airway.

117, for a railcar, bus, or trailer having a wheel-axle operated fan associated with an outlet airway.

**103 Having both inlet and outlet airways:**

This subclass is indented under subclass 83. Subject matter comprising a means for admitting air to the ventilated space and a separate means for exhausting air from the space.

- (1) Note. The air admitting and exhausting means must be separate and distinct from one another. A single means which admits air to the space under one condition and exhausts air from the space under another condition is not included in this and indented subclasses.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 8+, for a chimney or stack having both inlet and outlet airways.  
 100+, for an apparatus for positively moving air present in a ventilated space in a transporting device from one position to another within the space without adding fresh air (i.e., recirculation alone).  
 103+, for a railcar, bus, or trailer having both inlet and outlet airways.  
 141+, for other vehicles having both inlet and outlet airways.  
 237+, for static structures (e.g., buildings) having both inlet and outlet airways.

**104 Including unitary inlet and outlet housing:**

This subclass is indented under subclass 103. Subject matter comprising a single structure containing portions of the air admitting and air exhausting means.

- (1) Note. This subclass is intended to include subject matter in which the air admitting and air exhausting means are integral.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 142, for other vehicles which have a unitary inlet and outlet housing.  
 234+, for static structures having forced recirculation and which use a unitary inlet and outlet housing.

241+, for static structures (e.g., buildings) which have a unitary inlet and outlet housing.

**105 With air pump:**

This subclass is indented under subclass 103. Subject matter comprising an apparatus for adding energy to and moving the air.

- (1) Note. The air moving apparatus is often a fan.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 249, for a static structure (e.g., building) including both inlet and outlet airways and an air pump.

**106 Wind or wheel-axle operated:**

This subclass is indented under subclass 105. Subject matter wherein the air moving apparatus is driven by moving air or by a rotating shaft which supports a wheel of the transporting device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 15, for a wind-operated fan associated with chimney or stacktop structure.  
 101, for a wind-operated fan in a railcar, bus, or trailer used for forced recirculation.  
 102, for a wheel-axle operated fan in a railcar, bus, or trailer used in a forced recirculation system.  
 113, for a railcar, bus, or trailer wind-operated fan associated with an inlet airway.  
 114, for a railcar, bus, or trailer having a wheel-axle operated fan associated with an inlet airway.  
 117, for a railcar, bus, or trailer having a wind-operated fan or a wheel-axle operated fan associated with an outlet airway.  
 240, for a wind-operated air pump associated with a building having both an inlet and an outlet airway.

**107 Having inlet airway:**

This subclass is indented under subclass 83. Subject matter comprising means for admitting air to the ventilated space.

- (1) Note. Subject matter disclosing an airway which can function either as an inlet or an outlet is classified in this and indented subclasses.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 10+, for chimneys or stacks having inlet airways.  
143+, for other vehicles having inlet airways.  
254+, for static structures (e.g., buildings) having inlet airways.

**108 Including specific air distributor:**

This subclass is indented under subclass 107. Subject matter comprising particular means for directing the air as it enters the ventilated space.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 152+, for other types of vehicles having specific air distributors.  
185+, for hollow partitions which may disclose specific air distributors.  
284+, for static structures having specific air distributors.

**109 Having adjustable deflector:**

This subclass is indented under subclass 108. Subject matter wherein the aperture structure comprises an air guiding means readily moveable to different positions to direct the air along different paths into the ventilated space.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 155, for a specific distributor having an adjustable deflector used in other types of vehicles.

**110 Liquid contact:**

This subclass is indented under subclass 107. Subject matter comprising means for the air to be directly exposed to water or another liquid.

- (1) Note. Liquid contact is usually for air humidification, cooling, or purification.  
(2) Note. Dehumidifying means are not included under this subclass definition.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 157, for other vehicles in which the inlet air is exposed to a liquid.  
223, for a window ventilator having an air passage between the sill and the bottom of the sash in which the air is exposed to a liquid.  
291, for a floor-type register in a building where the inlet air is exposed to a liquid.  
328, for other types of registers in a building where the inlet air is exposed to a liquid.  
337, for inlet airways for static structures, in general, (e.g., buildings) where the inlet air is exposed to a liquid.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 313 for air moistening attachments for stovepipes and subclass 508 for a fireplace with a room humidifier.  
159, Concentrating Evaporators, subclass 5 for concentrating evaporators designed to evaporate a liquid in film or thin layer form.  
237, Heating Systems, subclasses 78+ for air moistening devices used in heating systems.  
239, Fluid Sprinkling, Spraying, and Diffusing, for slow diffusers.  
261, Gas and Liquid Contact Apparatus, appropriate subclasses for air moistening devices, per se, and subclasses 127+ for heating and cooling devices combined with moisteners for the air. Devices including significant ventilating structure and excluding specific heating or cooling structure will be found in this Class 454.  
312, Supports: Cabinet Structure, subclasses 31+ for gas or vapor treatment of material contained within a cabinet structure.

**111 With deflecting separator-type filter:**

This subclass is indented under subclass 107. Subject matter comprising means for separating particles from the air by use of properties of momentum.

**112 With air pump:**

This subclass is indented under subclass 107. Subject matter comprising an apparatus for adding energy to and moving the air.

- (1) Note. The air moving apparatus is usually a fan.

**113 Wind operated:**

This subclass is indented under subclass 112. Subject matter wherein the air moving apparatus is driven by moving air.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 15, for a wind-operated fan associated with chimney or stacktop structure.
- 101, for a wind-operated fan in a railcar, bus, or trailer used for forced recirculation.
- 106, for other railcar, bus, or trailer wind-operated fans associated with an inlet and outlet airway.
- 240, for a wind-operated air pump associated with a building having both an inlet and an outlet airway.

**114 Wheel-axle operated:**

This subclass is indented under subclass 112. Subject matter wherein the air moving apparatus is driven by a rotating shaft which supports a wheel of the transporting device.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 102, for a wheel-axle operated fan in a railcar, bus, or trailer used in a forced recirculation system.
- 106, for a railcar, bus, or trailer having both an inlet and an outlet airway and including wheel-axle operated fans.
- 117, for a railcar, bus, or trailer having a wheel-axle operated fan associated with an outlet airway.

**115 Having outlet airway:**

This subclass is indented under subclass 83. Subject matter comprising means for exhausting air from the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 162+, for other types of vehicles having an outlet airway.
- 339+, for static structures (e.g., buildings) having an outlet airway.

**116 With current inducing jet:**

This subclass is indented under subclass 115. Subject matter comprising a nozzle which ejects a high velocity flow stream to draw the exhausting air from the ventilated space.

- (1) Note. The high velocity flow stream is usually diverted natural air current (i.e., wind) resulting from movement of the vehicle.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 22+, for a chimney or stacktop which uses a diverted natural air current to induce flow in the outlet airway.
- 39+, for other chimney or stacktop structures which use current inducing jets to induce flow in the outlet airway.
- 163, for other vehicles which use a current inducing jet (often wind caused by the movement of the vehicle) to induce flow in the outlet airway.

**117 With air pump (e.g., wind or wheel-axle operated, etc.):**

This subclass is indented under subclass 115. Subject matter comprising an apparatus for adding energy to and moving the air.

- (1) Note. The air moving apparatus is usually a fan which may be driven by various means such as moving air or a rotating shaft which supports a wheel of the transporting device.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 15, for a wind-operated fan associated with chimney or stacktop structure.
- 101, for a wind-operated fan in a railcar, bus, or trailer used in a forced recirculation system.
- 102, for a wheel-axle operated fan in a railcar, bus, or trailer used in a forced recirculation system.

- 106, for a railcar, bus, or trailer having both an inlet and an outlet airway and including wheel-axle operated fans.
- 113, for a railcar, bus, or trailer wind-operated fan associated with an inlet airway.
- 114, for a railcar, bus, or trailer having a wheel-axle operated fan associated with an inlet airway.
- 118 Freight:**  
This subclass is indented under subclass 69. Subject matter wherein the ventilated space is particularly adapted for transporting goods, equipment, or livestock.
- (1) Note. This subclass includes a means to admit air to, exhaust air from, or circulate air about a space in a nonspecific freight transport container.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
77, for ventilated aircraft cargo cabins.  
79, for ventilated cargo holds on-board a ship.  
88, for ventilation of a freight-carrying railcar or trailer.
- SEE OR SEARCH CLASS:  
217, Wooden Receptacles, subclass 42 for ventilated crates and subclass 74 for ventilated barrels, per se.  
220, Receptacles, subclasses 1.5+ for freight containers, per se.
- 119 Having external connection:**  
This subclass is indented under subclass 69. Subject matter comprising a means separate and distinct from the transporting device which attaches to the device to admit air to, exhaust air from, or circulate air about the ventilated space.
- (1) Note. The external connection is usually used when the vehicle is stationary or parked for an extended period of time.
- 120 Seat structure:**  
This subclass is indented under subclass 69. Subject matter wherein an occupant seating means contains particular structure for admitting air to, exhausting air from, or circulating air about the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
907, for a cross-reference art collection of ventilating devices combined with seats.
- SEE OR SEARCH CLASS:  
297, Chairs and Seats, subclasses 180.1+ for means to transfer heat primarily to or from the seat or means to subject the seat to fume smoke or the like.
- 121 Condensation preventer (e.g., defroster, etc.):**  
This subclass is indented under subclass 84. Subject matter comprising means for preventing water, in either solid or liquid form, which has been removed from the air, from accumulating on a surface.
- (1) Note. The condensate is usually prevented from accumulating on a window.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
85, for a condensation preventer specific to a locomotive cab.  
93, for a condensation preventer specific to a railcar, bus, or trailer, in general, and not restricted to a locomotive cab.  
198, for a condensation preventer for a window in a static structure, (e.g., building).
- 122 Air directed between double paned window:**  
This subclass is indented under subclass 121. Subject matter comprising two adjacent and parallel light admitting panels which together form a light admitting structure and wherein air is guided intermediate the two panels to prevent congealed material from accumulating on the panels.
- 123 Air directed at window exterior:**  
This subclass is indented under subclass 121. Subject matter comprising a light admitting structure and wherein the air is guided at an outside surface of the structure to prevent congealed material from accumulating thereon.

**124 Side or rear window:**

This subclass is indented under subclass 121. Subject matter wherein the congealed material is prevented from accumulating on a light admitting structure in a barrier of the ventilated space which light admitting structure is predominantly parallel to or facing away from a direction of forward movement of the transporting device.

**125 Having sweeping air distributor:**

This subclass is indented under subclass 121. Subject matter comprising means for guiding air along a regularly changing directional path.

- (1) Note. A continually oscillating or rotating air distributor is included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 153, for a sweeping-type ventilating air distributor in a vehicle.  
285, for a sweeping-type ventilating air distributor in a static structure (e.g., building).

**126 Having means for combining heated and unheated air:**

This subclass is indented under subclass 121. Subject matter comprising means for mixing separate warmed and unwarmed air portions together prior to admittance of the portions to the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 160, for a vehicle heating system which combines heated and unheated air.

SEE OR SEARCH CLASS:

- 237, Heating Systems, appropriate subclasses for a means for ventilating a space in combination with specific heating structure.

**127 Having dashboard air distributor (e.g., for windshield, etc.):**

This subclass is indented under subclass 121. Subject matter comprising an aperture means in the ventilated space which is in or supported directly by a panel immediately below a forward facing, light admitting, and wind protect-

ing structure of the transporting device, which aperture directs air into the ventilated space.

- (1) Note. The air is usually directed at the wind protecting structure to prevent congealed material from accumulating thereupon.

SEE OR SEARCH CLASS:

- 296, Land Vehicles: Bodies and Tops, subclasses 84.1+ for vehicle windshields.

**128 Means for open window (e.g., deflector, etc.):**

This subclass is indented under subclass 69. Subject matter comprising a light admitting structure in a barrier of the ventilated space (i.e., a window) and further comprising air guiding or directing means adapted for use with the light admitting structure when the structure is in an open position allowing free passage of air therethrough to or from the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 95+, for window or entry-door ventilation in a railcar, bus, or trailer.

SEE OR SEARCH CLASS:

- 296, Land Vehicles: Bodies and Tops, subclass 152 for vehicle windows which include an accessory (e.g., visor, shield, etc.) with no ventilation features. If particular structure is present on the closure or in or about the opening to cause air to flow into or out of the ventilated space, the subject matter is proper for this class (454).

**129 Sunroof:**

This subclass is indented under subclass 128. Subject matter wherein the open window is in a top surface bounding the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 94, for a railcar, bus, or trailer roof vent closure.

SEE OR SEARCH CLASS:

- 296, Land Vehicles: Bodies and Tops, subclasses 180.1+ for fins or air deflectors associated with the roof of a land

vehicle to affect the movement of a slip stream of air over the vehicle and subclasses 210+ for a roof for a vehicle body having an opening in said roof and a closure for said opening in said roof which, when in the open position, permits free communication of light or air between the interior of the body and the atmosphere, but having no particular structure, either on the closure or in or about the opening, to cause air to flow into or out of the body. However, see subclass 217, in particular, for roof structure having air deflectors actively associated with the closure, so that upon movement of the closure toward an open position, the deflector is caused to move from a retracted position to a position in which it is operative to act upon the vehicle's slipstream. If particular structure is present on the closure or in or about the opening to cause air to flow into or out of the ventilated space, the subject matter is proper for Class 454.

**130 Windshield or rear window:**

This subclass is indented under subclass 128. Subject matter wherein the open window faces forward or rearward of the direction of travel of the transporting device.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 146+, for an air admitting aperture in a vehicle cowl.
- 150, for an air admitting aperture adjacent to a windshield.
- 151, for an air admitting aperture in an exterior side or rear side of a vehicle.

**131 At upper edge of sliding window:**

This subclass is indented under subclass 128. Subject matter wherein the window opens by gliding along its surface and wherein the air guiding or directing means is positioned at a top portion of the structure's perimeter.

- (1) Note. This subclass does not include an air guiding or directing means which is at an upper edge of a vertically sliding window only when the window is in its fully retracted position.

**132 Having means to selectively adjust airflow:**

This subclass is indented under subclass 131. Subject matter comprising means which may be moved as desired to different positions to vary the direction or amount of air passing through the air guiding or directing means.

- (1) Note. A device wherein airflow is adjusted by mere opening or closing of the window is not included in this subclass.

**133 Having plural air passages:**

This subclass is indented under subclass 131. Subject matter wherein the air guiding or directing means includes two or more physically separate air paths.

**134 Pivoted window:**

This subclass is indented under subclass 128. Subject matter wherein the air guiding or directing means is adapted for use with a window which opens by rotation about a fixed axis.

- (1) Note. Deflectors for pivoted vent windows are included in this subclass.

**135 Adjacent front edge of window:**

This subclass is indented under subclass 128. Subject matter wherein the air guiding or directing means is positioned next to a forward portion of the perimeter of the window.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 134, for a pivoted window having a ventilating means or deflector adjacent its front edge.

**136 Roof structure:**

This subclass is indented under subclass 69. Subject matter comprising air guiding or directing means integral with a barrier above the ventilated space of the transporting device (i.e., roof).

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 94, for a railcar, bus, or trailer roof vent closure.



- 130+, for air admitting, exhausting, or circulating means used with a windshield which opens.
- 146+, for an air admitting aperture in a vehicle cowl.
- 150, for an air admitting aperture adjacent to a windshield.
- 151, for an air admitting aperture in an exterior side or rear side of a vehicle.
- 137 Including duct extending along roof:**  
This subclass is indented under subclass 136. Subject matter comprising an air carrying conduit stretching within or immediately adjacent the roof.
- 138 Having exterior inlet opening over windshield:**  
This subclass is indented under subclass 137. Subject matter wherein the conduit comprises an aperture means above and generally adjacent a forward facing light admitting and wind protecting structure (i.e., windshield), the aperture means admitting air to the conduit from atmosphere.
- 139 Having Forced Recirculation:**  
This subclass is indented under subclass 69. Subject matter comprising an air moving apparatus which contacts and directly forces air from one location within the ventilated space to another separate location within the space.
- (1) Note. Recirculating flow must directly contact and be driven by an air moving apparatus to be included in this and indented subclasses. Subject matter wherein recirculating flow is merely "induced" by a separate forced flow is not included in this and indented subclasses.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 99+, for forced recirculation within a railcar, bus, or trailer type of vehicle.
- 205, for recirculation combined with window features.
- 228+, for forced recirculation within a static structure, (e.g., building).
- 140 Forced recirculation alone or agitating fan:**  
This subclass is indented under subclass 139. Subject matter wherein the air moving apparatus contacts and directly moves only existing air within the ventilated space.
- (1) Note. Subject matter including means for also introducing air from outside of the ventilated space into the space is excluded from this subclass.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 100+, for a railcar, bus, or trailer having forced recirculation of vehicle air alone.
- 230+, for a static structure (e.g., building) having forced recirculation of ventilating air alone.
- 141 Having both inlet and outlet airways:**  
This subclass is indented under subclass 69. Subject matter comprising a means for admitting air to the ventilated space and a separate means for exhausting air from the space.
- (1) Note. The air admitting and exhausting means must be separate and distinct from one another. A single means which admits air to the space under one condition and exhausts air from the space under another condition is not included in this and indented subclasses.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 8+, for a chimney or stack having both inlet and outlet airways.
- 100+, for an apparatus for positively moving air present in a ventilated space in a transporting device from one position to another within the space without adding fresh air (i.e., recirculation alone).
- 103+, for railcars, buses, or trailers having both inlet and outlet airways.
- 145, for a means combined with a closure which acts alternatively to admit air to and exhaust air from a ventilated space.
- 237+, for static structures (e.g., buildings) having both inlet and outlet airways.

**142 Including unitary inlet and outlet housing:**  
This subclass is indented under subclass 141. Subject matter comprising a single structure containing portions of the air admitting and air exhausting means.

- (1) Note. This subclass is intended to include subject matter in which the air admitting and air exhausting means are integral.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 104, for railcars, buses, or trailers which have a unitary inlet and outlet housing.  
234+, for static structures having forced recirculation and which use a unitary inlet and outlet housing.  
241+, for static structures (e.g., buildings) which have a unitary inlet and outlet housing.

**143 Having inlet airway:**  
This subclass is indented under subclass 69. Subject matter comprising means for admitting air to the ventilated space.

- (1) Note. Subject matter disclosing an airway which can function either as an inlet or an outlet is classified in this and indented subclasses.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 10+, for chimneys or stacks having an inlet airway.  
107, for railcars, buses, or trailers having inlet airways.  
254+, for static structures (e.g., buildings) having inlet airways.

**144 Including duct extending along floor:**  
This subclass is indented under subclass 143. Subject matter comprising an air carrying conduit stretching parallel to and within or adjacent a lower, supporting surface of the ventilated space (i.e., floor).

- (1) Note. An air carrying conduit which merely passes perpendicularly through the supporting surface is not included in this subclass.

**145 Selective inlet, outlet, and closure:**  
This subclass is indented under subclass 143. Subject matter comprising means which can be positioned at will to admit air to the ventilated space, to exhaust air from the ventilated space, or to prevent airflow to and from the ventilated space.

**146 Including exterior cowl inlet:**  
This subclass is indented under subclass 143. Subject matter comprising an aperture through which air is admitted from atmosphere to the ventilated space, which aperture is on a top or outer side portion of the vehicle transporting device forward of a forward facing, light passing, and wind protecting structure (i.e., windshield).

- (1) Note. The top or outer side portion of the vehicle transporting device forward of the windshield is commonly called a cowl.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 130+, for air admitting, exhausting, or circulating means used with a windshield which opens.  
136+, for an air admitting aperture incorporated in vehicle roof structure.  
150, for an air admitting aperture adjacent to a windshield.  
151, for an air admitting aperture in an exterior side or rear side of a vehicle.

**147 With moisture deflector or drain:**  
This subclass is indented under subclass 146. Subject matter comprising means to divert, channel, or convey liquid away from the air admitting means.

- (1) Note. Means to dehumidify the air is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 156, for means to dehumidify vehicle inlet air.

**148 Ducting to heat exchanger:**  
This subclass is indented under subclass 146. Subject matter comprising means for directing air from the aperture to a nonspecific heat

transferring structure for warming or cooling the air prior to admittance of the air to the ventilated space.

- (1) Note. See the class definition for what constitutes a nonspecific heat transferring structure such as is appropriate for this class. Recitation of an “air conditioning unit” or a “heater” does not exclude a patent from this class.

SEE OR SEARCH CLASS:

- 62, Refrigeration, various subclasses for a means for ventilating a space in combination with specific cooling or refrigerating structure.
- 237, Heating Systems, various subclasses for a means for ventilating a space in combination with specific heating structure.

**149 Having exterior door:**

This subclass is indented under subclass 146. Subject matter comprising a structure exposed to atmosphere which swings, slides, rotates, or otherwise moves between two positions, one exposing the (cowl) aperture to atmosphere to admit air therethrough and a second covering the aperture to prevent admittance of air therethrough.

**150 Including exterior windshield inlet:**

This subclass is indented under subclass 143. Subject matter comprising an aperture exposed to atmosphere through which the air is admitted to the ventilated space, which aperture is adjacent a forward facing, light passing, and wind protecting structure (i.e., windshield) of the transporting device.

- (1) Note. The aperture is usually above or below and in the plane of the windshield.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 130+, for air admitting, exhausting, or circulating means used with a windshield which opens.
- 136+, for an air admitting aperture incorporated in vehicle roof structure.
- 146+, for an air admitting aperture in a vehicle cowl.
- 151, for an air admitting aperture in an exterior side or rear side of a vehicle.

**151 Including exterior rear or rear side inlet:**

This subclass is indented under subclass 143. Subject matter comprising an aperture through which the air is admitted from atmosphere to the ventilated space, which aperture is (1) in a rearwardly facing outer boundary portion of the transporting device or (2) in an outer boundary portion of the transporting device facing horizontally and transverse to a direction of forward movement of the device and which portion lies rearward of a light admitting, wind protecting structure (i.e., windshield).

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 130+, for air admitting, exhausting, or circulating means used with a windshield which opens.
- 136+, for an air admitting aperture incorporated in vehicle roof structure.
- 146+, for an air admitting aperture in a vehicle cowl (forward of windshield).
- 150, for an air admitting aperture adjacent to a windshield.

**152 Including specific air distributor:**

This subclass is indented under subclass 143. Subject matter comprising particular means for directing the air as it enters the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 108+, for railcars, buses, or trailers having specific air distributors.
- 185+, for hollow partitions which may disclose specific air distributors.
- 284+, for static structures having specific air distributors.

**153 Sweeping type:**

This subclass is indented under subclass 152. Subject matter comprising means for guiding the air along a regularly changing directional path.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 125, for a sweeping-type vehicle window defroster.

285, for a sweeping-type ventilating air distributor in a static structure (e.g., building).

**154 Having swiveling nozzle:**

This subclass is indented under subclass 152. Subject matter comprising an air-enveloping passage which rotates to different positions to direct air along different paths into the ventilated space.

- (1) Note. Dashboard ball or spherical outlets are included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

286, for a building air distributor having an airway joint with ball or cylinder rotatable in a socket.

**155 Having adjustable deflector:**

This subclass is indented under subclass 152. Subject matter comprising an air guiding means readily moveable to different positions to direct the air along different paths into the ventilated space.

- (1) Note. Damper means which distribute inlet air between two or more aperture structures are not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

109, for a specific distributor having an adjustable deflector used in a railcar, bus, or trailer.

143, for a damper means which distributes inlet air between two or more aperture containing structures.

**156 With air treatment means:**

This subclass is indented under subclass 143. Subject matter comprising means to change a naturally occurring state of the air.

- (1) Note. A device which removes dust or grit from inlet air is included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

201+, for window ventilation having means for lowering the temperature of the air combined with filtering means.

207, for a filtering means combined with window ventilation.

SEE OR SEARCH CLASS:

96, Gas Separation: Apparatus, appropriate subclasses for means for removing dust and other contaminants from air, per se.

**157 Liquid contact:**

This subclass is indented under subclass 156. Subject matter comprising means for the air to be directly exposed to water or another liquid.

- (1) Note. Liquid contact is usually for air humidification, cooling, or purification.

- (2) Note. Dehumidifying means are not included under this subclass definition.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

110, for a railcar, bus, or trailer in which the inlet air is exposed to a liquid.

223, for a window ventilator having an air passage between the sill and the bottom of the sash in which the air is exposed to a liquid.

291, for a floor-type register in a building where the inlet air is exposed to a liquid.

328, for other types of registers in a building where the inlet air is exposed to a liquid.

337, for inlet airways for static structures, in general, (e.g., buildings) where the inlet air is exposed to a liquid.

SEE OR SEARCH CLASS:

126, Stoves and Furnaces, subclass 313 for air moistening attachments for stovepipes and subclass 508 for a fireplace with a room humidifier.

159, Concentrating Evaporators, subclass 5 for concentrating evaporators designed to evaporate a liquid in film or thin layer form.

- 237, Heating Systems, subclasses 78+ for air moistening devices used in heating systems.
- 239, Fluid Sprinkling, Spraying, and Diffusing, for slow diffusers.
- 261, Gas and Liquid Contact Apparatus, appropriate subclasses for air moistening devices, per se, and subclasses 127+ for heating and cooling devices combined with moisteners for the air. Devices including significant ventilating structure and excluding specific heating or cooling structure will be found in this Class 454.
- 312, Supports: Cabinet Structure, subclasses 31+ for gas or vapor treatment of material contained within a cabinet structure.
- 158 Porous filter:**  
This subclass is indented under subclass 156. Subject matter comprising a means containing a multitude of orifices which permit the passage therethrough of air but which resist the passage therethrough of solids or other impurities.
- 159 Heating:**  
This subclass is indented under subclass 156. Subject matter comprising nonspecific means for warming the air.
- (1) Note. See the class definition for what constitutes a nonspecific means for warming the air such as is appropriate for this class. Recitation of an "air conditioning unit" or a "heater" does not exclude a patent from this class.
- SEE OR SEARCH CLASS:  
62, Refrigeration, appropriate subclasses for a means for ventilating a space in combination with specific cooling or refrigerating structure.
- 237, Heating Systems, appropriate subclasses for a means for ventilating a space in combination with specific heating structure.
- 160 Having means for combining heated and unheated air:**  
This subclass is indented under subclass 159. Subject matter comprising means for mixing separate warmed and unwarmed air portions together prior to admittance to the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
125, for a vehicle window defroster which combines heated and unheated air.
- 161 Having heat exchange core:**  
This subclass is indented under subclass 159. Subject matter wherein the nonspecific unit for warming the air receives its heat from a cooling liquid of a propulsion plant of the transporting device.
- SEE OR SEARCH CLASS:  
165, Heat Exchange, subclasses 59, 234+, and 248+, for the combination of air distribution means with specific heat exchange means adapted to heat or cool the air and subclass 60 for the combination of an air moistening device with a specific heat exchange means adapted to heat or cool a chamber.
- 162 Having outlet airway:**  
This subclass is indented under subclass 69. Subject matter comprising means for exhausting air from the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
115+, for a railcar, bus, or trailer having an outlet airway.  
339+, for static structures (e.g., buildings) having an outlet airway.
- 163 With current inducing jet:**  
This subclass is indented under subclass 162. Subject matter comprising a nozzle which ejects a high velocity flow stream to draw air from the ventilated space to atmosphere.
- (1) Note. The high velocity flow stream is usually diverted natural air current (i.e., wind) resulting from movement of the vehicle.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
22+, for a chimney or stacktop which uses a diverted natural air current to induce flow in the outlet airway.

- 39+, for other chimney or stacktop structures which use current inducing jets to induce flow in the outlet airway.
- 116, for a railcar, bus, or trailer which uses a current inducing jet (often wind caused by the movement of the vehicle) to induce flow in the outlet airway.
- 164 Exterior side outlet:**  
This subclass is indented under subclass 162. Subject matter comprising an aperture through which the air is exhausted from the outlet passage to atmosphere, which aperture is in an outer boundary portion of the transporting device, which boundary portion faces horizontally and transverse to a direction of forward movement of the device.
- (1) Note. An outlet through a vehicle side door or side pillar (e.g., C-pillar, etc.) is included in this subclass.
- (2) Note. The outer boundary portion through which the air is exhausted usually forms a barrier of the ventilated space.
- 165 Exterior rear outlet:**  
This subclass is indented under subclass 162. Subject matter comprising an aperture through which the air is exhausted from the outlet passage to atmosphere, which aperture is in a rearwardly facing, outer boundary portion of the transporting device.
- (1) Note. An outlet through a rear deck of a vehicle is included in this subclass.
- 166 VEHICULAR TUNNEL:**  
This subclass is indented under the class definition. Subject matter wherein an enclosed passageway for a passenger transporting, goods transporting, or equipment transporting device is ventilated.
- (1) Note. The enclosed passageway is often underground.
- SEE OR SEARCH CLASS:  
104, Railways, subclass 52 for smoke removers in roundhouses and train sheds over locomotive smoke stacks
- which may be provided with means for producing an artificial draft.
- 167 With air pump:**  
This subclass is indented under subclass 166. Subject matter comprising an air moving apparatus for forcing fresh air to or stale air from the enclosed passageway.
- 168 MINE:**  
This subclass is indented under the class definition. Subject matter wherein an earth excavation for extracting ore or minerals is ventilated.
- 169 With partition means (e.g., brattice, etc.):**  
This subclass is indented under subclass 168. Subject matter comprising a barrier means for resisting flow of air from one part of the earth excavation to another part of the excavation.
- (1) Note. This subclass includes brattice walls, mine safety doors, etc.
- (2) Note. A mere wall of a duct which carries air to, from, or along an excavation or gallery is not included in this subclass.
- (3) Note. The partition means often acts as a safety device for protection from fire or explosion or is erected to deflect air toward a particular location in the excavation.
- SEE OR SEARCH CLASS:  
299, Mining or In Situ Disintegration of Hard Material, subclass 12 for processes in which a step is included for preventing injury to a human working in a mine or mining operation.
- 170 Flexible sheet:**  
This subclass is indented under subclass 169. Subject matter wherein the flow resisting means comprises a pliable fabric or material.
- (1) Note. The pliable fabric or material may be cloth, canvas, a synthetic sheeting, etc.
- 171 Having inlet and outlet ductwork:**  
This subclass is indented under subclass 168. Subject matter comprising conduit structure for admitting fresh ventilating air to the ventilated

space and for exhausting stale air from the space.

- (1) Note. The conduit structure (ductwork) must be distinct from the walls defining the mine excavation or gallery.

**172 Having inlet ductwork:**

This subclass is indented under subclass 168. Subject matter comprising conduit structure for admitting fresh ventilating air to the ventilated space.

- (1) Note. The conduit structure (ductwork) must be distinct from the walls defining the mine excavation or gallery.

**173 STORAGE AREA FOR PERISHABLES:**

This subclass is indented under the class definition. Subject matter comprising means to ventilate a space used for the safekeeping of a good subject to decay or spoilage.

- (1) Note. Perishables include grain, hay, ears of corn, seeds, fruit, vegetables, etc.

SEE OR SEARCH CLASS:

- 34, Drying and Gas or Vapor Contact With Solids, subclasses 201+ for drying houses, kilns, or containers, particularly subclasses 232+ for plural gas or vapor inlets and/or outlets.
- 62, Refrigeration, appropriate subclasses for ventilated rooms or chambers in combination with cooling or refrigeration means specialized to refrigeration.

**174 Harvested crop ventilation:**

This subclass is indented under subclass 173. Subject matter wherein the goods comprise a newly obtained product of the soil.

**175 Having perforated or slotted duct contacting crop:**

This subclass is indented under subclass 174. Subject matter comprising a conduit having a series of holes or elongated openings therealong for admitting or exhausting air from the ventilated space, the conduit being positioned so as to touch the product of the soil associated with the ventilated space.

- (1) Note. The conduit is usually placed inside a pile made up of the product of the soil.

**176 Including insertion means:**

This subclass is indented under subclass 175. Subject matter comprising means to facilitate placement of the conduit into the product of the soil.

- (1) Note. The placement facilitating means usually comprises a pointed conduit end which allows the conduit to be forced inside a pile of the product of the soil.

SEE OR SEARCH CLASS:

- 239, Fluid Sprinkling, Spraying, and Diffusing, subclasses 271+ for apparatus including a sharpened or tapered element supported on or connected to either (1) a terminal outlet member or (2) a supply conduit means in order to adapt the apparatus to be forced through a wall, object, or mass to make the latter more accessible for spraying.

**177 Horizontal and vertical perforated or slotted ducts:**

This subclass is indented under subclass 175. Subject matter comprising two or more such conduits having a series of holes or elongated openings therealong for admitting fresh air into the ventilated space, one of the conduits extending parallel to and another perpendicular to the force of gravity.

- (1) Note. A floor duct is considered to be horizontal and a vertically extending wall duct is considered to be vertical.

**178 With air pump:**

This subclass is indented under subclass 177. Subject matter comprising an air moving apparatus which forces the air into or withdraws it from the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 180, for a horizontal perforated or slotted harvested crop ventilating duct with an air pump.

- 181, for other perforated or slotted harvested crop ventilating ducts with an air pump.
- 179 Horizontal duct:**  
This subclass is indented under subclass 175. Subject matter wherein the conduit extends parallel to the force of gravity.
- (1) Note. A perforated, ventilating floor duct is included in this subclass.
- 180 With air pump:**  
This subclass is indented under subclass 179. Subject matter comprising an air moving apparatus which forces the air into or withdraws it from the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 178, for horizontal and vertical perforated or slotted harvested crop ventilating ducts with an air pump.
- 181, for other perforated or slotted harvested crop ventilating ducts with an air pump.
- 181 With air pump:**  
This subclass is indented under subclass 175. Subject matter comprising an air moving apparatus which forces the air into or withdraws it from the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 178, for horizontal and vertical perforated or slotted harvested crop ventilating ducts with an air pump.
- 180, for a horizontal perforated or slotted harvested crop ventilating duct with an air pump.
- 182 Granular crop or corn ears:**  
This subclass is indented under subclass 174. Subject matter wherein the product of the soil in the ventilated space comprises a plurality of particle or pellet sized elements or corn ears.
- (1) Note. Granular crops include grain in the kernel, malt, seeds, corn kernels, etc.
- (2) Note. Potatoes and vegetables, in general, are not considered to be granular crops.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 80, for a waterborne vehicle adapted to carrying a granular crop.
- 175+, for a perforated or slotted duct contacting and ventilating a granular crop.
- SEE OR SEARCH CLASS:
- 34, Drying and Gas or Vapor Contact With Solids, appropriate subclasses, particularly subclasses 174, 224, 225, and 232 for means for directing air relative to means for handling or supporting material.
- 52, Static Structures (e.g., Buildings), appropriate subclasses, particularly 192+, 198+, 204.1+, 218, 219, 220.1+, and 302.1+ for an enclosure or building component having no means for positively causing or directing air flow other than a port, perforation, door or window.
- 183 Provision safe:**  
This subclass is indented under subclass 173. Subject matter comprising means to ventilate a space used for safekeeping of food or supplies ready for use or consumption.
- SEE OR SEARCH CLASS:
- 34, Drying and Gas or Vapor Contact With Solids, subclasses 72, 76, and 84 for apparatus for treating a gas or vapor that contacts solids and includes forced circulation of the gas or vapor.
- 187, Elevator, Industrial Lift Truck, or Stationary Lift for Vehicle, subclasses 401+ for particular elevator load support structure or arrangement.
- 312, Supports: Cabinet Structure, subclasses 31.01+ for provision safes having liquid wetted means continuously exposed to a chamber and to an unconfined gas and subclass 213 for provision safes having a perforated exterior wall.
- 184 ELECTRONIC CABINET:**  
This subclass is indented under the class definition. Subject matter wherein the ventilated space is a nonspecific repository with shelves,



drawers, or compartments for the safekeeping of electrical or electronic circuitry.

- (1) Note. Ventilating systems for the interior of television cabinets or personal computer cabinets are included.
- (2) Note. This subclass is meant to include on the board recitation of electric or electronic circuitry. Any details of the electric or electronic circuitry are beyond the scope of this class.

**SEE OR SEARCH CLASS:**

- 312, Supports: Cabinet Structure, subclasses 7.1+ for radio-type cabinets, per se, and subclasses 8+ for phonograph cabinets, per se. Cabinets in combination with apparatus such as loud-speakers, dials, tuning handles or shafts, chassis, etc., are classified with the apparatus.
- 455, Telecommunications, subclass 217 for means to protect a receiver circuit or elements thereof from damage due to outside electrical influences.

**185 HOLLOW PARTITION:**

This subclass is indented under the class definition. Subject matter wherein a barrier of a structure (e.g., wall, floor, roof, etc.) is made hollow for the passage of air to effect ventilation of said structure.

- (1) Note. Patents wherein the ventilating transfer means is a duct or conduit within the partition are not to be placed in this subclass.

**SEE OR SEARCH CLASS:**

- 52, Static Structures (e.g., Buildings), subclass 302.1 for a mere vent communicating with the interior of a partition.
- 249, Static Molds, subclasses 22 and 36+ for molds for forming a partition having a ventilating shaft.

**186 Having blower:**

This subclass is indented under subclass 185. Subject matter wherein the ventilating air movement is forced by means such as a fan, air pump, etc.

**187 CLEAN ROOM:**

This subclass is indented under the class definition. Subject matter comprising means specifically for conducting naturally occurring, normally present particles away from a work enclosure.

**188 HAVING PROTECTING AIR CURRENT:**

This subclass is indented under the class definition. Subject matter comprising an air jet or air sheet forced across an opening to a (ventilated) space to prevent entrance of dust, flies, or other debris into the space.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 60, for a covered workbench chamber having an access opening which acts as an air outlet from the chamber.

**189 Surrounding protected area:**

This subclass is indented under subclass 188. Subject matter wherein the air current jet or sheet substantially bounds the space being protected from dust, flies, or other debris.

- (1) Note. An air jet or sheet which forms the boundary of one half or more of a space being protected is included in this subclass.

**190 Including plural, layered currents:**

This subclass is indented under subclass 188. Subject matter comprising two or more distinct air jets or sheets which are positioned one outside of the other relative to the space being protected.

**191 Including suction outlet:**

This subclass is indented under subclass 188. Subject matter comprising a passageway for attracting and exhausting the jet or sheet of air after it has passed across the opening.

**192 Including current adjusting means:**

This subclass is indented under subclass 188. Subject matter comprising means for varying the direction, rate of flow, or character of the air jet or sheet.

**193 Cabinet enclosure (e.g., display case, etc.):**

This subclass is indented under subclass 188. Subject matter wherein the ventilated space is a nonspecific repository with shelves, drawers, or compartments for the safekeeping or display of a collection of objects or materials.

- (1) Note. A display case having a protecting air current is included in this subclass.

**194 BLAST OR SHOCK WAVE PREVENTION:**

This subclass is indented under the class definition. Subject matter comprising a means which senses a change in pressure or air flow resulting from an explosion or a high intensity air pressure disturbance and said means acting either to allow or to obstruct air flow based upon such sensing.

- (1) Note. The devices of this subclass are commonly used in association with bomb shelters, or to allow venting of a ventilated space based upon a severe atmospheric pressure drop (e.g., tornadoes).
- (2) Note. The means usually permits flow in one direction along a conduit while blocking flow in an opposite direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 3+, for a backdraft preventer incorporated in chimneytop or stacktop structure, particularly subclass 26.
- 70+, for condition responsive pressure maintenance inside a vehicle which may include a valve.
- 227, for a backdraft preventer combined with a window.
- 238, for pressure regulation of a ventilation system which includes both inlet and outlet airways.
- 255, for pressure regulation of a ventilation system which includes an inlet airway.
- 259, for a backdraft preventer and an inlet airway.
- 340, for pressure regulation of a ventilation system which includes an outlet airway.
- 353, for a backdraft preventer and fan for an outlet airway.

- 359+, for a backdraft preventer for an outlet airway.

**195 MEANS COMBINED WITH DOOR:**

This subclass is indented under the class definition. Subject matter comprising means to admit air to, exhaust air from, or circulate air about a (ventilated) space in combination with a moveable structure which closes off an entranceway to the space.

- (1) Note. The entranceway must be for the passage of something other than mere air, for example, a human or good.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 95+, for entry-door ventilation structure in a railcar, bus, or trailer.

**196 MEANS COMBINED WITH WINDOW:**

This subclass is indented under the class definition. Subject matter comprising means to admit air to, exhaust air from, or circulate air about a (ventilated) space in combination with a structure for admitting light into the space through a barrier of the space.

- (1) Note. For references to the lines between Class 454 and other classes, see the search notes below.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 95+, for window ventilation structure in a railcar, bus, or trailer
- 128+, for window ventilation for other types of vehicles.

SEE OR SEARCH CLASS:

- 49, Movable or Removable Closures, appropriate subclasses for a mere through passage in a wall combined with a closure, e.g., a window for the passage of air. See, in particular, subclass 71 for distinct side wings movable with a closure. Also see the class definition of Class 49, Lines with Other Classes, for the lines between Class 49, Class 52, and this class (454).
- 52, Static Structures (e.g., Buildings), appropriate subclasses for static structures having windows therein. See the

Search Notes to the class definition of Class 52 for the lines between Class 52 and this class (454).

- 160, Flexible or Portable Closure, Partition, or Panel, appropriate subclasses for screens and other flexible and portable panel type closures.

**197 For bed or couch:**

This subclass is indented under subclass 196. Subject matter adapted for use with (1) a piece of furniture for reclining or sleeping or (2) a person supported on such a piece of furniture.

- (1) Note. Typically, air is supplied to or removed from a person's head by way of a window connection while the person is lying on the piece of furniture.

**SEE OR SEARCH CLASS:**

- 5, Beds, subclass 10.1 for a bed modified to project partly through a window or having some modification adapting them for use in connection with or relation to a window, subclasses 652.1+ for the ventilating of a cushion, and subclasses 724+ for the ventilating of a mattress.
- 160, Closures, Partitions and Panels, Flexible and Portable, appropriate subclasses, particularly subclasses 45+, for outriggered flexible and portable panels without additional means to control, direct, or cause ventilation.

**198 Condensation preventer:**

This subclass is indented under subclass 84. Subject matter comprising means for preventing water, in either solid or liquid form, which has been removed from the air, from accumulating on a surface.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 85, for a condensation preventer specific to a locomotive cab.
- 93, for a condensation preventer specific to a railcar, bus, or trailer, in general, and not restricted to a locomotive cab.
- 121, for a condensation preventer specific to a vehicle, in general.

**SEE OR SEARCH CLASS:**

- 15, Brushing, Scrubbing, and General Cleaning, subclass 250.01 for window cleaning attachments combined with means for applying air.
- 52, Static Structures (e.g., Buildings), subclasses 171.3+ for residual transparent panel with treating means and see notes.

**199 Skylight:**

This subclass is indented under subclass 196. Subject matter wherein the structure for admitting light is located on a top covering portion (i.e., roof) of the ventilated space.

- (1) Note. See the Search Notes below for references to lines between Class 454 and other classes.
- (2) Note. Exterior vault or manhole covers are not included in this subclass.

**SEE OR SEARCH THIS CLASS, SUBCLASS:**

- 48, for an exterior vault or manhole cover which may also admit light.

**SEE OR SEARCH CLASS:**

- 49, Movable or Removable Closures, appropriate subclasses for a mere through passage in a barrier combined with a closure for the passage of air. And see Lines With Other Classes of the Class 49 class definition for the line between Class 49 and Class 454.
- 52, Static Structures (e.g., Buildings), subclasses 18, 80, 198+, and 200 for skylight-type fixtures. And see the Class 454 search notes in the Class definition of Class 52 for the line between the two classes.

**200 With air pump:**

This subclass is indented under subclass 196. Subject matter comprising an apparatus for adding energy to and moving the air.

- (1) Note. The air is usually moved from one side to an opposite side of the window.

## SEE OR SEARCH CLASS:

- 160, Flexible or Portable Closure, Partition, or Panel, appropriate subclasses for flexible and portable window panels.
- 415, Rotary Kinetic Fluid Motors or Pumps, appropriate subclasses for a blower, per se.
- 416, Fluid Reaction Surfaces (i.e., Impellers), appropriate subclasses for a fan, per se.
- 417, Pumps, appropriate subclasses for a motor driven blower, per se.

**201 Cooling air conditioner:**

This subclass is indented under subclass 200. Subject matter wherein the air moving apparatus comprises a nominal means for lowering air temperature.

- (1) Note. The mere naming of an air cooling air conditioner in the claims will allow for a document to be placed in this subclass; however, if the document claims any specific details beyond a broad fan or housing of an air conditioner, e.g., a condenser or an evaporator, it should be classified elsewhere. See the Search Class notes below.

## SEE OR SEARCH CLASS:

- 62, Refrigeration, particularly subclass 262 for a window connected or mounted air conditioner, or subclasses 426+ for a cooling air conditioner with gas forcing means wherein specific details of the cooling air conditioner are claimed. See the (1) Note above.
- 248, Supports, particularly subclasses 208+ for specially mounted or attached window brackets.
- 312, Supports: Cabinet Structure, particularly subclass 236 for a specific air conditioner housing.

**202 Having readily moveable flow control means:**

This subclass is indented under subclass 201. Subject matter comprising easily shiftable means for altering a direction or rate of flow of the air.

**203 With extensible side panel:**

This subclass is indented under subclass 201. Subject matter comprising a partition or screening element attached to the apparatus and moved laterally to close or block a window opening between a window frame member and the apparatus.

## SEE OR SEARCH CLASS:

- 62, Refrigeration, subclass 262 for an air conditioner (including specific details of the cooling means) mounting in a window.

**204 With mounting or support means:**

This subclass is indented under subclass 201. Subject matter comprising means for holding or uniting the air moving apparatus to the window.

## SEE OR SEARCH CLASS:

- 62, Refrigeration, subclass 262 for an air conditioner (including specific details of the cooling means) mounting in a window.

**205 Recirculation means:**

This subclass is indented under subclass 200. Subject matter comprising means for circulating or moving a portion of air from one position in the ventilated space to another position within the space.

- (1) Note. Subject matter comprising forced, "partial recirculation", wherein fresh air and recirculating air contact and are directly forced into the space by an air moving apparatus are included in this and indented subclasses unless otherwise indicated.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 99+, for forced recirculation in a railcar, bus, or trailer-type vehicle.
- 139+, for forced recirculation in other types of vehicles.
- 228+, for recirculation in a static structure (e.g., building).
- 261+, for inlet airways which induce recirculatory air flow.

**206 With specific noise inhibiting structure:**

This subclass is indented under subclass 200. Subject matter wherein particular significance is attributed to a configuration which prevents or reduces unwanted sound.

- (1) Note. See the Search Class notes below for references to the line between Class 454 and other classes.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 262, for an inlet airway, including structure for mixing plural airstreams together, which has specific noise inhibiting structure.
- 346, for an outlet airway having vibration absorbing or preventing structure.
- 906, for a cross-reference art collection of ventilating structure combined with noise inhibiting means.

SEE OR SEARCH CLASS:

- 181, Acoustics, appropriate subclasses. Note particularly subclasses 212+ for a fluid conducting-type sound muffler of a general nature, and see subclass 212, (1) Note, for the line between Class 181 and this class (454); and subclass 224 for a sound absorbing ventilating duct.

**207 With specific filtering means:**

This subclass is indented under subclass 200. Subject matter wherein particular significance is attributed to a means for removing solids or other impurities from the air.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 156+, particularly subclass 158 for porous filters used to filter out solid particles in a vehicle inlet airway.
- 201+, for window ventilation having means for lowering the temperature of the air combined with filtering means.

SEE OR SEARCH CLASS:

- 96, Gas Separation: Apparatus, appropriate subclasses for means for removing dust and other contaminants from air, per se.

**208 Propeller fan having rotary axis perpendicular to window:**

This subclass is indented under subclass 200. Subject matter comprising an air moving element which rotates about an axis lying at right angles to a plane which generally defines the window.

**209 With mounting means for pump reversal:**

This subclass is indented under subclass 208. Subject matter comprising means for holding or uniting the air moving apparatus to the window and wherein the holding means permits selectively facing of the air moving apparatus in either of two opposing directions.

- (1) Note. The opposing directions are usually to allow the fan to selectively introduce air to or exhaust air from the ventilated space.
- (2) Note. A mounting means which must be reversed with the air pump to face the pump in an opposite direction is not included in this subclass.

**210 With extensible side panel:**

This subclass is indented under subclass 208. Subject matter comprising a partition or screening element attached to the apparatus and moved laterally to close or block a window opening between a window frame and the air pump.

**211 Having air passage in sash:**

This subclass is indented under subclass 196. Subject matter comprising a frame which directly attaches to and holds a light admitting panel (i.e., pane) of the window and wherein the frame includes a path therethrough for the air.

- (1) Note. A ventilation means which contains an air duct, but which merely attaches to the frame, is not included in this subclass unless the frame itself includes an air path therethrough.

SEE OR SEARCH CLASS:

- 49, Movable or Removable Closures, subclass 171 for a viewing, ventilating, or packet passage within a closure.

**212 Having air passage means within, attaching to, or replacing pane:**

This subclass is indented under subclass 196. Subject matter wherein the means (1) comprises an air passage through a light admitting panel of the window, (2) connects directly to a light admitting panel of the window, or (3) is substituted in place of a light admitting panel of the window.

- (1) Note. A window structure merely comprising light admitting (e.g., glass, etc.) air guiding slats or louvers between which air flows is not included in this subclass.
- (2) Note. A mere window pane which opens by pivoting or sliding is not included in this subclass.
- (3) Note. The light admitting panel noted above must be a part of the window proper and not merely a part of a ventilating device attached thereto.
- (4) Note. A frame which directly attaches to and holds a light admitting panel of the window and which includes a path there-through for the air is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 196, for a means comprising a window pane which slides to an open position within a stationary sash.
- 211, for a frame which directly attaches to and holds a light admitting panel of the window and which includes an air pathway therethrough.
- 224, for a window structure comprising light admitting air guiding slats or louvers.
- 225, for a window pane which pivots to an open position in a stationary sash.

**213 Having air passage at window top:**

This subclass is indented under subclass 196. Subject matter wherein the means is located at an upper portion of the window.

**214 Having air passage between sill and bottom of sash:**

This subclass is indented under subclass 196. Subject matter comprising an air path located between a base of the window (i.e., a sill) and a base of a frame which directly attaches to and holds a lowermost light admitting panel of the window (i.e., a sash).

- (1) Note. A window frame which supports the sash is not considered to be part of the sash.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 200+, for a window combined with an air pump located at various positions including at the bottom of the window between the window sash and window sill.
- 213, for a window having an air passage at a top portion of a window and also between a window sill and a sash bottom.

SEE OR SEARCH CLASS:

- 49, Movable or Removable Closures, particularly subclasses 50+ for a safety guard insertable between a window sash and a window sill.
- 160, Flexible or Portable Closure, Partition, or Panel, appropriate subclasses for a screen inserted between the window sash and window sill.

**215 Including wall sloping downward from window:**

This subclass is indented under subclass 214. Subject matter comprising a shield or air guiding surface which (1) forms a bounding side or wall of a path for the air and (2) extends vertically downward and away from the window.

- (1) Note. A downward sloping, outside awning is included in this subclass.
- (2) Note. The shield or air guiding surface may lie on the ventilated space side of the window or on an opposite side of the window.

- (3) Note. A panel comprising parallel or concentric ventilating slats or louvers is not considered to be a wall.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 224, for a panel comprising parallel or concentric air guiding slats which slopes downward from the window.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), for rigid-type awnings having no means other than vents or openings for allowing flow of air.
- 160, Flexible or Portable Closure, Partition, or Panel, particularly subclasses 20, 22, and 45+ for outriggered structures of flexible material or of plural strips, slats, or panels interconnected for relative motion and for such type structures combined with other flexible, portable, or rigid panels or closures where there are no additional air guiding or controlling features.

**216 Including wall for upwardly deflecting inlet air:**

This subclass is indented under subclass 214. Subject matter comprising a shield or air guiding surface which (1) forms a bounding side or wall of a path for the air and (2) directs the air in a vertically upward direction into the ventilated space.

- (1) Note. The shield or guiding surface usually (1) lies parallel to the window or (2) extends vertically and into the ventilated space from the window.
- (2) Note. A device also having a position sloping downward from the window (e.g., an awning) is not included in this subclass.
- (3) Note. A panel comprising parallel or concentric air guiding slats or louvers is not considered to be a wall.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 215, for a wall for upwardly deflecting inlet air which wall is sloped or can be

readily sloped downward from the window.

- 221, for a window having a panel comprising parallel or concentric air guiding slats which upwardly deflects inlet air.
- 307, for other inlet air ventilators having an air deflecting wall extending into the room.

**217 Having adjustable angle or swingable mounting:**

This subclass is indented under subclass 216. Subject matter comprising a supporting means for the air guiding surface which (1) facilitates changing inclination of the guiding surface relative to the window or (2) permits arcuate movement of the guiding surface.

- (1) Note. A device wherein the inclination is changeable so as to slope downward from the window is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 215, for an air guiding surface combined with a window which surface is changeable so as to slope downward from the window.

**218 Including collapsible or flexible, perpendicular side wall:**

This subclass is indented under subclass 217. Subject matter comprising a partitioning surface at an end of the air guiding surface which (1) has one edge which is connected to the air guiding surface for movement therewith and an opposite edge which is stationary and (2) lies generally at a right angle to the air guiding surface.

- (1) Note. The partitioning surface usually is constructed of a flexible material or of plural, relatively moveable strips.
- (2) Note. The side wall usually prevents air from bypassing the guiding surface and not being deflected upwardly.

**219 Having readily moveable air regulating means:**

This subclass is indented under subclass 217. Subject matter comprising easily shiftable means to increase or decrease flow of the air.

- (1) Note. A shiftable internal body such as a damper is included in this subclass.
- (2) Note. Readily moveable air regulating means does not include a mere sliding or pivoting window frame or sash.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 217, for an air passage between a window sill and sash bottom including an adjustable angle wall for upwardly deflecting inlet air.

## 220 **Having slidably interconnected sections:**

This subclass is indented under subclass 216. Subject matter comprising at least two air guiding surface portions attached together which slip or glide relative to one another.

- (1) Note. The slipping or gliding motion is usually for adjustment of the surface to suit window size.

SEE OR SEARCH CLASS:

- 160, Flexible or Portable Closure, Partition, or Panel, subclass 223 for such devices made of two or more slidably interconnected sections, wherein each of the slats is composed of sliding or telescoping sections, the device having no additional means for directing or controlling air; subclasses 90+, particularly subclass 104, for such devices combined with flexible or portable panels, but having no means in addition to such combination for directing or controlling the air; subclasses 222+ for plural strip, slat, or panel devices slidably interconnected; and subclasses 375+ for single frames having movable side bar sections.

## 221 **Including louvers:**

This subclass is indented under subclass 214. Subject matter comprising generally parallel or concentric air guiding slats which lie in the air path.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 224, for other window ventilators including louvers.

- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.
- 265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.
- 277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.
- 288, for a baseboard-type inlet airway which may include louvers.
- 290, for a floor-type inlet airway which may include louvers.
- 299+, for a ceiling-type inlet airway which may include louvers.
- 309+, for a wall-type inlet airway which includes a louvered air distributor.
- 325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.
- 335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.
- 347+, for an outlet airway including an air pump which may have air regulating louvers.
- 358+, for other outlet airways which may have air regulating louvers.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and subclass 633 for location of related structures in other classes.
- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See the Class 160 class definition.

## 222 **Including readily moveable air regulating means:**

This subclass is indented under subclass 214. Subject matter comprising easily shiftable means to increase or decrease flow of the air.

- (1) Note. A shiftable internal body such as a damper is included in this subclass.



- (2) Note. Readily moveable air regulating means does not include a mere sliding or pivoting window frame or sash.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 217, for an air passage between a window sill and sash bottom including an adjustable angle wall for upwardly deflecting inlet air.
- 219, for an air passage between a window sill and sash bottom including a wall for upwardly deflecting inlet air and a readily moveable air regulating means.
- 221, for a device comprising parallel or concentric air guiding slats which pivot.

### 223 With means for liquid contact:

This subclass is indented under subclass 214. Subject matter comprising means for directly exposing the air to a liquid.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 110, for a railcar, bus, or trailer in which the inlet air is exposed to a liquid.
- 157, for other vehicles in which the inlet air is exposed to a liquid.
- 291, for a floor-type register in a building where the inlet air is exposed to a liquid.
- 328, for other types of registers in a building where the inlet air is exposed to a liquid.
- 337, for inlet airways for static structures, in general (e.g., buildings), where the inlet air is exposed to a liquid.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 313 for air moistening attachments for stovepipes and subclass 508 for a fireplace with a room humidifier.
- 159, Concentrating Evaporators, subclass 5 for concentrating evaporators designed to evaporate a liquid in film or thin layer form.
- 237, Heating Systems, subclasses 78+ for air moistening devices used in heating systems.

- 239, Fluid Sprinkling, Spraying, and Diffusing, for slow diffusers.

- 261, Gas and Liquid Contact Apparatus, appropriate subclasses for air moistening devices, per se, and subclasses 127+ for heating and cooling devices combined with moisteners for the air. Devices including significant ventilating structure and excluding specific heating or cooling structure will be found in this Class 454.

- 312, Supports: Cabinet Structure, subclasses 31+ for gas or vapor treatment of material contained within a cabinet structure.

### 224 Having louvers:

This subclass is indented under subclass 196. Subject matter wherein the means comprises generally parallel or concentric air guiding slats.

- (1) Note. The air guiding slats may be composed of an opaque or light admitting (i.e., louvered window panes) material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.
- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.
- 265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.
- 277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.
- 288, for a baseboard-type inlet airway which may include louvers.
- 290, for a floor-type inlet airway which may include louvers.
- 299+, for a ceiling-type inlet airway which may include louvers.
- 309+, for a wall-type inlet airway which includes a louvered air distributor.
- 325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.

- 335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.
- 347+, for an outlet airway including an air pump which may have air regulating louvers.
- 358+, for other outlet airways which may have air regulating louvers.

SEE OR SEARCH CLASS:

- 49, Movable or Removable Closures, particularly subclasses 74.1+ for movable louvered windows which have adjacent edges which contact each other (i.e., are not constantly spaced apart) in the closed position to effect a closure between them.
- 52, Static Structures (e.g., Building), particularly subclass 473 for a louvered panel and subclass 633 for location of related structures in other classes.
- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See class definition, part C, of Class 160.

**225 Tilting pane window:**

This subclass is indented under subclass 196. Subject matter wherein the window comprises a light admitting panel which rotates about a horizontal axis.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 217, for an air passage between a window sill and sash bottom having a wall for upwardly deflecting inlet air, the wall being adjustable for angle or having a swingable mounting.
- 221, for an air passage between a window sill and sash bottom which includes light admitting parallel or concentric slats which rotate about a horizontal axis.
- 224, for a window in combination with light admitting parallel or concentric ventilating slats which rotate about a horizontal axis.

**226 Having wind deflector:**

This subclass is indented under subclass 196. Subject matter comprising a shield or air guiding surface which extends into a flow of natural air (i.e., wind) to direct the air through the window into the ventilated space or to draw air out of the ventilated space.

- (1) Note. A mere shield which shelters a window from the wind, but allows air to pass through the window into or out of the ventilated space, is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 215, for an air passage between a window sill and sash including a wall sloping downward from the window which may deflect air into or out of the window.

**227 Including backdraft preventer:**

This subclass is indented under subclass 196. Subject matter comprising a means which senses pressure or direction of air flow to or from a ventilated space and which acts to allow airflow under certain sensed conditions and to obstruct airflow under other sensed conditions.

- (1) Note. The means usually permits flow in one direction along a conduit while blocking flow in an opposite direction.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 3+, for a backdraft preventer incorporated in chimneytop or stacktop structure, particularly subclass 26.
- 70+, for condition responsive pressure maintenance inside a vehicle which may include a valve.
- 194, for a blast or shock wave type of backdraft preventer.
- 238, for pressure regulation of a ventilation system which includes both inlet and outlet airways.
- 255, for pressure regulation of a ventilation system which includes an inlet airway.
- 259, for a backdraft preventer and an inlet airway.

- 340, for pressure regulation of a ventilation system which includes an outlet airway.
- 353, for a backdraft preventer and fan for an outlet airway.
- 359+, for a backdraft preventer for an outlet airway.

## 228 **HAVING FORCED RECIRCULATION:**

This subclass is indented under the class definition. Subject matter comprising an air moving apparatus which contacts and directly forces air from one location within a (ventilated) space to another separate location within the space.

- (1) Note. This subclass includes a multi-compartmented structure such as a multiple room house provided the air flow path is recirculatory and not merely a flow-through ventilation path.
- (2) Note. Subject matter comprising forced, "partial recirculation", wherein fresh air and recirculating air contact and are directly forced into the space by an air moving apparatus are included in this and indented subclasses unless otherwise indicated.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 99+, for forced recirculation in a railcar, bus, or trailer-type vehicle.
- 139+, for forced recirculation in other types of vehicles.
- 205, for recirculation combined with window features.
- 261+, for inlet airways which induce recirculatory air flow.

## 229 **Including automatic control means:**

This subclass is indented under subclass 228. Subject matter comprising a means to sense a condition or change of condition which condition or change of condition may or may not occur, which means is effective to activate a separate means for regulating the quantity or direction of air flowing to, from, or about the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 70+, for automatic pressure regulation of a vehicle ventilating system.

- 75, for automatic control of a vehicle ventilating system.
- 238, for automatic pressure regulation of a ventilating system having both inlet and outlet airways.
- 239, for automatic control of a ventilating system having both inlet and outlet airways.
- 255, for automatic pressure regulation of a ventilating system having an inlet airway.
- 256, for automatic control of a ventilating system having an inlet airway.
- 340, for automatic pressure regulation of a ventilating system having an outlet airway.

SEE OR SEARCH CLASS:

- 236, Automatic Temperature and Humidity Regulation, appropriate subclasses for automatic control means for controlling temperature or humidity.

## 230 **Forced recirculation alone:**

This subclass is indented under subclass 228. Subject matter wherein the air moving apparatus contacts and directly moves only existing air within the ventilated space.

- (1) Note. Subject matter including means for also introducing air from outside of the ventilated space into the space is excluded from this and indented subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 100+, for a railcar, bus, or trailer having forced recirculation of vehicle air alone.
- 140, for other types of vehicles having forced recirculation of vehicle air alone.

## 231 **Having recirculating duct connecting upper and lower room air strata:**

This subclass is indented under subclass 230. Subject matter comprising a conduit which guides air between separate horizontal air layers within a ventilated chamber.

- (1) Note. The air in the different layers usually differs in some characteristic such as temperature.

- (2) Note. The conduit must connect different strata within the same chamber or room to be included in this subclass (i.e., a duct connecting two different chambers on different floors of a building is not included in this subclass).

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 187, for a clean room having a recirculating duct connecting upper and lower room air strata.

**232 Having plural or branched recirculation ducts:**

This subclass is indented under subclass 230. Subject matter comprising two or more conduits for separately guiding air between locations within the ventilated space.

- (1) Note. A single conduit comprising plural sections connected in series is not included in this subclass.

**233 For use with heating or cooling means:**

This subclass is indented under subclass 230. Subject matter wherein the apparatus for moving the existing air is combined with a nominally recited means for raising or lowering air temperature in the ventilated space.

- (1) Note. The mere naming of a furnace, heat exchanger, or air conditioner in the claims will allow for a document to be placed in this subclass. However, if the document claims a specific furnace, heat exchanger, or air conditioner, it should be classified elsewhere.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 236, for other forced recirculation systems combined with a nominally recited heating or cooling means.

SEE OR SEARCH CLASS:

- 62, Refrigeration, appropriate subclasses for specific cooling or refrigeration means in a ventilating system.  
165, Heat Exchange, appropriate subclasses for specific heating and cooling means in a ventilating system.

- 237, Heating Systems, particularly subclasses 48 and 53 for specific furnace means in a ventilating system and the Search Class notes of the class definition and subclass 46 for the line between Class 237 and Class 454.

**234 Including unitary housing having both inlet and outlet airways:**

This subclass is indented under subclass 228. Subject matter comprising a single structure containing means for admitting air to a ventilated space and a separate means for exhausting air from the space.

- (1) Note. A means for solely guiding air which is to be returned to the ventilated space (i.e., recirculating air alone) is not considered to be an inlet or outlet.  
(2) Note. The air admitting and exhausting means must comprise separate and distinct passages. A single passage which admits air to the space under one condition and exhausts air from the space under another condition is not included in this subclass.  
(3) Note. This and indented subclasses are intended to include subject matter in which the separate air admitting and air exhausting means are contained within or form a single, integral structure.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 104, for a railcar, bus, or trailer having a unitary inlet and outlet housing which does not recirculate air.  
142, for other types of vehicles having a unitary inlet and outlet housing which does not recirculate air.  
241+, for a static structure (e.g., building) having a unitary inlet and outlet housing which does not recirculate air.

**235 Having air pump means for both airways:**

This subclass is indented under subclass 234. Subject matter comprising an air moving means which directly contacts air to force it into the ventilated space and an air moving means which directly contacts air to force it out of the space.

- (1) Note. While most subject matter in this subclass comprises a means for contacting and forcing the air into the ventilated space and a separate means for contacting and forcing air out of the space, subject matter comprising a single means which performs both functions is also included herein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 244, for similar devices where there is no forced recirculation.  
252, for ventilation systems having air pump means for separate inlet and outlet airways.

**236 For use with heating or cooling means:**

This subclass is indented under subclass 228. Subject matter wherein the apparatus for moving the existing air is combined with a nominally recited means for raising or lowering air temperature in the ventilated space.

- (1) Note. The mere naming of a furnace, heat exchanger, or air conditioner in the claims will allow for a document to be placed in this subclass. However, if the document claims a specific furnace, heat exchanger, or air conditioner, it should be classified elsewhere.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 233, for a means having forced recirculation alone combined with a nominally recited heating or cooling means.

SEE OR SEARCH CLASS:

- 62, Refrigeration, appropriate subclasses for specific cooling or refrigeration means in a ventilating system.  
165, Heat Exchange, appropriate subclasses for specific heating and cooling means in a ventilating system.  
237, Heating Systems, particularly subclasses 48 and 53 for specific furnace means in a ventilating system and the Search Class notes of the class definition and subclass 46 for the line between Class 237 and Class 454.

**237 HAVING BOTH INLET AND OUTLET AIRWAYS:**

This subclass is indented under the class definition. Subject matter comprising a means for admitting air to a (ventilated) space and a separate means for exhausting air from the space.

- (1) Note. The air admitting and exhausting means must be separate and distinct from one another. A single means which admits air to the space under one condition and exhausts air from the space under another condition is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 8+, for a chimney or stack having both inlet and outlet airways.  
103+, for railcars, buses, or trailers having both inlet and outlet airways.  
141+, for other vehicles having both inlet and outlet airways.  
254+, for a means which acts alternatively to admit air to or release air from a ventilated space.

**238 Pressure regulation:**

This subclass is indented under subclass 237. Apparatus including means responsive to air conditions either in or outside of an enclosure or the air condition in the supply system for the enclosure to maintain a predetermined pressure in said enclosure and/or a difference in pressure between said enclosure and the outside atmosphere.

- (1) Note. Systems which maintain enclosures under air pressure but having no air condition responsive automatic controls are in other appropriate subclasses of this class, e.g., those having differential air input and discharge.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 70, for pressure regulation with a vehicle and note the classes referred to under "SEARCH CLASS" for that subclass.  
255, for pressure regulation of a structure which includes an inlet airway.  
340, for pressure regulation of a structure which includes an outlet airway.

**239 Including automatic control means:**

This subclass is indented under subclass 237. Subject matter comprising a means to sense a condition or change of condition which condition or change of condition may or may not occur, which means is effective to activate a separate means for regulating the quantity or direction of air flowing to or from the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 70+, for automatic pressure regulation of a vehicle ventilating system.
- 75, for automatic control of a vehicle ventilating system.
- 229, for automatic control of a forced recirculation ventilating system.
- 238, for automatic pressure regulation of a ventilating system having both inlet and outlet airways.
- 255, for automatic pressure regulation of a ventilating system having an inlet airway.
- 256, for automatic control of a ventilating system having an inlet airway.
- 340, for automatic pressure regulation of a ventilating system having an outlet airway.

SEE OR SEARCH CLASS:

- 236, Automatic Temperature and Humidity Regulation, appropriate subclasses for automatic control means for controlling temperature or humidity.

**240 With wind-operated air pump:**

This subclass is indented under subclass 237. Subject matter comprising an air moving apparatus powered by natural air current for forcing air to or from the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 15, for a wind-operated fan associated with chimney or stacktop structure.
- 101, for a wind-operated fan in a railcar, bus, or trailer used for forced recirculation.
- 106, for other railcar, bus, or trailer wind-operated fans associated with an inlet and outlet airway.

- 113, for other railcar, bus, or trailer wind-operated fans associated with an inlet airway.

**241 Including unitary inlet and outlet housing:**

This subclass is indented under subclass 237. Subject matter comprising a single structure containing portions of the air admitting and air exhausting means.

- (1) Note. This and indented subclasses are intended to include subject matter in which the air admitting and air exhausting means are integral.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 104, for railcars, buses, or trailers which have a unitary inlet and outlet housing.
- 142, for other vehicles which have a unitary inlet and outlet housing.
- 234+, for static structures having forced recirculation and which use a unitary inlet and outlet housing.

**242 Rooftop:**

This subclass is indented under subclass 241. Subject matter wherein the single structure is located on or in an outdoor exposed, top barrier of the ventilated space.

- (1) Note. A conduit which passes through the roof to conduct air to and from an area immediately below the roof is proper for this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 1+, for specific chimney or stack structure wherein air communicates with an area substantially below the roof proper.

**243 Sleeved vent for ceiling, wall, or floor (i.e., thimble):**

This subclass is indented under subclass 241. Subject matter wherein the single structure comprises a casing which acts alone and is inserted in an interior top, side, or bottom structural barrier of the (ventilated) space to guide air separately and in opposite directions between adjacent, unconfined locations on opposite sides of the barrier.

- (1) Note. An air distributing register with return vent which works in conjunction with a duct is not included in this subclass. The adjacent air on opposite sides of the barrier must be unconfined by ducting or like structures.
- (2) Note. A bank-vault ventilator thimble is included in this subclass.
- 244 With air pump means for both inlet and outlet airways:**  
This subclass is indented under subclass 243. Subject matter comprising an air moving means which directly contacts air to force it into the ventilated space and an air moving means which directly contacts air to force it out of the space.
- (1) Note. While most subject matter in this subclass comprises a means for contacting and forcing the air into the ventilated space and a separate means for contacting and forcing air out of the space, subject matter comprising a single means which performs both functions is also included herein.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 235, for subject matter having forced recirculation and both inlet and outlet airways, and further having air pump means for both of the airways, which airways are contained in a unitary housing.
- 252, for ventilation systems having air pump means for separate inlet and outlet airways.
- 245 Air distributor with return vent (e.g., register, etc.):**  
This subclass is indented under subclass 241. Subject matter wherein the single structure comprises a means for directing the airflow as it enters the ventilated space and an aperture for exhausting air from the space.
- 246 Baseboard type:**  
This subclass is indented under subclass 245. Subject matter wherein the single structure is located at the juncture of an interior, side structural barrier (i.e., wall) and an interior, bottom structural barrier (i.e., floor) of the ventilated space.
- 247 Floor type:**  
This subclass is indented under subclass 245. Subject matter wherein the single structure is located on or in an interior, bottom structural barrier of the ventilated space.
- 248 Ceiling type:**  
This subclass is indented under subclass 245. Subject matter wherein the single structure is located on or in an interior, top structural barrier of the ventilated space.
- 249 With air pump:**  
This subclass is indented under subclass 241. Subject matter comprising an air moving apparatus for forcing air into or out of the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 105, for a railcar, bus, or trailer which includes both inlet and outlet airways and an air pump.
- 243+, for a sleeved vent having both inlet and outlet airways and further including an air pump.
- 250 Natural ventilation including air passage through rooftop (i.e., no air pump):**  
This subclass is indented under subclass 237. Subject matter wherein the means for admitting air into the ventilated space and means for exhausting air from the space function by means other than an air moving apparatus for forcing air into or out of the space and wherein one of the means comprises an air carrying conduit which passes through an external top barrier of the space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 1+, for chimney or stack structure which may pass through a roof.
- 251 With air pump means:**  
This subclass is indented under subclass 237. Subject matter comprising air moving means for forcing air into or out of the ventilated space.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 239, for inlet and outlet airways including automatic control means and an air pump.
- 240, for inlet and outlet airways including a wind-operated air pump.
- 241+, for a unitary inlet and outlet housing with an air pump, particularly subclasses 243+ and 249.

**252 For both inlet and outlet airways:**

This subclass is indented under subclass 251. Subject matter wherein the air moving means directly contacts air to force it into the ventilated space and directly contacts air to force it out of the space.

- (1) Note. While most subject matter in this subclass comprises a means for contacting and forcing the air into the ventilated space and a separate means for contacting and forcing air out of the space, subject matter comprising a single means which performs both functions is also included herein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 235, for subject matter having forced recirculation and both inlet and outlet airways, and further having air pump means for both of the airways, which airways are contained in a unitary housing.
- 244, for a sleeved vent for a ceiling, wall, or floor with air pump means for both inlet and outlet airways.

**253 For outlet airway:**

This subclass is indented under subclass 251. Subject matter wherein the air moving means directly contacts air to force it out of the ventilated space.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 252, for air pump means for both inlet and outlet airways.

**254 HAVING INLET AIRWAY:**

This subclass is indented under the class definition. Subject matter comprising means for admitting air to a (ventilated) space.

- (1) Note. Subject matter relating to an airway which is not specifically an inlet or outlet airway (i.e., the airway can be used for either) is included in this and indented subclasses.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 10+, for chimneys or stacks having inlet airways.
- 107, for railcars, buses, or trailers having inlet airways.
- 143+, for other vehicles having inlet airways.

**255 Pressure regulation:**

This subclass is indented under subclass 254. Apparatus including means responsive to air conditions either in or outside of an enclosure or the air condition in the supply system for the enclosure to maintain a predetermined pressure in said enclosure and/or a difference in pressure between said enclosure and the outside atmosphere.

- (1) Note. Systems which maintain enclosures under air pressure but having no air condition responsive automatic controls are in other appropriate subclasses of this class, e.g., those having differential air input and discharge.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 70, for pressure regulation with a vehicle and note the classes referred to under "SEARCH CLASS" for that subclass.
- 238, for pressure regulation of a structure which includes both inlet and outlet airways.
- 340, for pressure regulation of a structure which includes an outlet airway.

**256 Including automatic control means:**

This subclass is indented under subclass 254. Subject matter comprising a means to sense a condition or change of condition which condition or change of condition may or may not



occur, which means is effective to activate a separate means for regulating the quantity or direction of the air flowing into the ventilated space.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 70+, for automatic pressure regulation of a vehicle ventilating system.
- 75, for automatic control of a vehicle ventilating system.
- 229, for automatic control of a forced recirculation ventilating system.
- 238, for automatic pressure regulation of a ventilating system having both inlet and outlet airways.
- 239, for automatic control of a ventilating system having both inlet and outlet airways.
- 255, for automatic pressure regulation of a ventilating system having an inlet airway.
- 340, for automatic pressure regulation of a ventilating system having an outlet airway.

SEE OR SEARCH CLASS:

- 236, Automatic Temperature and Humidity Regulation, appropriate subclasses for automatic control means for controlling temperature or humidity.

- 257 Emergency smoke or fire responsive valve:**  
This subclass is indented under subclass 256. Subject matter comprising a means for regulating the quantity of airflow dependent on a means for sensing the presence of either (1) gaseous emission from a sudden, unexpected flame of a serious nature or (2) a flame.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 28, for a chimney or stacktop with air current regulating means which is temperature responsive.
- 342, for a building outlet airway including an air pump and having means for controlling or dealing with smoke.
- 357, for other building outlet airways have means for controlling or dealing with smoke.
- 369, for fusible release controlled fire dampers.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 287.5 for fusible release dampers for stoves or furnaces.
- 169, Fire Extinguishers, particularly subclasses 42 and 56+ for fire extinguishing apparatus responsive to smoke or fire.

**258 Air temperature responsive:**

This subclass is indented under subclass 256. Subject matter wherein the relocatable slats or slat portions relocate due to changes in the hotness or coldness of air.

SEE OR SEARCH CLASS:

- 236, Automatic Temperature and Humidity Regulation, particularly subclass 49.1 for automatic temperature and humidity regulation of a ventilator.

**259 Including backdraft preventer:**

This subclass is indented under subclass 254. Subject matter comprising a means which senses pressure or direction of air flow to or from a ventilated space and which acts to allow airflow under certain sensed conditions and to obstruct airflow under other sensed conditions.

- (1) Note. The means usually permits flow in one direction along a conduit while blocking flow in an opposite direction.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 3+, for a backdraft preventer incorporated in chimneytop or stacktop structure, particularly subclass 26.
- 70+, for condition responsive pressure maintenance inside a vehicle which may include a valve
- 194, for a blast or shock wave type of backdraft preventer.
- 227, for a backdraft preventer combined with a window.
- 238, for pressure regulation of a ventilation system which includes both inlet and outlet airways.
- 255, for pressure regulation of a ventilation system which includes an inlet airway.
- 340, for pressure regulation of a ventilation system which includes an outlet airway.

- 353, for a backdraft preventer and fan for an outlet airway.  
 359+, for a backdraft preventer for an outlet airway.

**260 Through roof eaves or rafters:**

This subclass is indented under subclass 254. Subject matter particularly adapted to directing air through an opening in (1) a projecting overhang portion at the lower edge of a structure's external top covering (i.e., roof) or (2) an opening in or adjacent a sloping beam which supports a structure's external top covering.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 228+, for means mixing recirculated air with fresh air directed into a ventilated space.

SEE OR SEARCH CLASS:

- 236, Automatic Temperature and Humidity Regulation, particularly subclass 13 for plenum-type fluid mixers with automatic temperature and humidity regulation.

**261 Including structure for mixing plural air streams together:**

This subclass is indented under subclass 254. Subject matter in which the means for admitting the air includes a configuration which unites separately originating currents of air into a combined current of air.

- (1) Note. A means which mixes induced flow recirculation air with fresh inlet air for flow into a ventilated space is included in this and indented subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 228+, for a forced recirculation means which mixes plural airstreams together.

SEE OR SEARCH CLASS:

- 236, Automatic Temperature and Humidity Regulation, particularly subclass 13 for plenum-type fluid mixers with automatic temperature and humidity regulation.

**262 And having specific noise inhibiting structure:**

This subclass is indented under subclass 261. Subject matter in which particular significance is attributed to a configuration which prevents or deadens unwanted sound produced during the uniting of the separately originating currents of air.

- (1) Note. The specific noise inhibiting structure must be positively claimed for proper original patent placement in this subclass.  
 (2) Note. See the Search Class notes below for references to lines between Class 454 and other classes.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 206, for a window mounted air pump including specific noise inhibiting structure.  
 346, for an outlet airway having vibration absorbing or preventing structure.  
 906, for a cross-reference art collection of ventilating structure combined with noise inhibiting means.

SEE OR SEARCH CLASS:

- 181, Acoustics, particularly subclasses  
 212+ for a fluid-conducting-type sound muffler of a general nature (and see subclass 212 (1) Note, for the line between Class 181 and Class 454); and subclass 224 for a sound absorbing ventilating duct or curb.

**263 With shaped nozzle:**

This subclass is indented under subclass 261. Subject matter wherein the air uniting configuration includes a continuous formed, projecting, air spout with an opening therethrough for carrying one of the currents of air to be combined.

- (1) Note. A flat plate with a hole or plurality of holes is not considered to be a shaped nozzle unless it is on the end or side of a formed, projecting, spout-like structure.  
 (2) Note. Structures which mix plural air streams together and subsequently eject

the combined air stream through a nozzle are not included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

305, for an air distributing, ejecting inlet nozzle.

**264 And readily movable air regulating louver, damper, or cover:**

This subclass is indented under subclass 263. Subject matter wherein the continuous, formed, projecting air spout has a cooperating easily shiftable air permitting or preventing (1) group of parallel or concentric slats, (2) internal body, or (3) orifice cap or closure.

(1) Note. A louver, damper, or cover held in a single fixed position by a separate, movable, screw, bolt, or other permanent type, tool actuated fastener is not considered "readily movable".

SEE OR SEARCH THIS CLASS, SUBCLASS:

221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.

224, for other window ventilators including louvers.

265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.

277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.

288, for a baseboard-type inlet airway which may include louvers.

290, for a floor-type inlet airway which may include louvers.

299+, for a ceiling-type inlet airway which may include louvers.

309+, for a wall-type inlet airway which includes a louvered air distributor.

325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.

335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.

347+, for an outlet airway including an air pump which may have air regulating louvers.

358+, for other outlet airways which may have air regulating louvers.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.

160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See Class 160, Class Definition, for panel units made up of plural strips, slats, etc.

**265 With readily movable air regulating louver, damper, or cover:**

This subclass is indented under subclass 261. Subject matter having an easily shiftable air permitting or preventing (1) group of parallel or concentric slats, (2) internal body, or (3) orifice cap or closure.

(1) Note. A louver, damper, or cover held in a single fixed position by a separate, movable, screw, bolt, or other permanent type, tool actuated fastener is not considered "readily movable".

SEE OR SEARCH THIS CLASS, SUBCLASS:

221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.

224, for other window ventilators including louvers.

264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.

277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.

288, for a baseboard-type inlet airway which may include louvers.

- 290, for a floor-type inlet airway which may include louvers.
- 299+, for a ceiling-type inlet airway which may include louvers.
- 309+, for a wall-type inlet airway which includes a louvered air distributor.
- 325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.
- 335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.
- 347+, for an outlet airway including an air pump which may have air regulating louvers.
- 358+, for other outlet airways which may have air regulating louvers.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.
- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See the Class 160 class definition, for Panel units made up of plural strips, slats, etc.

**266 Pivoted:**

This subclass is indented under subclass 265. Subject matter wherein the shiftable slats, body, cap, or closure swing about a fixed axis region which is parallel to or within a major air engaging surface thereof.

**267 Plural:**

This subclass is indented under subclass 266. Subject matter having at least two swinging slats, bodies, caps, closures, or a combination of at least two elements thereof.

- (1) Note. A set of grouped pivoted slats (e.g., a pivoted louver set) is considered sufficient for inclusion in this subclass and its indented subclass.

**268 Including parallel louver vanes:**

This subclass is indented under subclass 267. Subject matter wherein the multiple swinging slats, bodies, caps closures, or combination thereof, include at least one set of slats having swinging members everywhere equidistant from each other.

**269 With air pump:**

This subclass is indented under subclass 261. Subject matter wherein the air admitting means includes an air moving apparatus for forcing the air into the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 228+, for an air pump used in combined inlet and outlet ventilator apparatus which exhausts a portion of the building air and returns the remaining portion of air to the stationary structure of the building along with incoming outside air, often into a combined stream of air.
- 338, for an inlet air way, including an air pump, of a generally nonmixing nature.

**270 Sleeved vent for ceiling, wall, or floor (e.g., thimble):**

This subclass is indented under subclass 254. Subject matter comprising a casing which acts alone and is inserted in an interior top, side, or bottom structural barrier of the (ventilated) space to direct air from an unconfined location outside of the space to an adjacent unconfined location on an opposite side of the barrier and within the space.

- (1) Note. An air distributing register which works in conjunction with an inlet duct is not included in this subclass. The adjacent air on opposite sides of the barrier must be unconfined by ducting or like structures.
- (2) Note. An exterior, wall-type louver panel is not included in this and indented subclasses unless the panel guides air through a barrier directly into the ventilated space.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

277+, for an exterior, wall-type louver panel for a building vent.

330+, for an air distributing register box, frame, or grating which acts in conjunction with an inlet airway or duct.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclass 302.1 for a passage between an interior part of a building and ambient atmosphere which does not direct or control air flow into a ventilated space. See the notes in Class 52, subclass 198, and in the main portion of the definitions.

#### 271 **Wall type:**

This subclass is indented under subclass 270. Subject matter wherein the barrier is a generally planar surface which extends vertically (i.e., parallel to the force of gravity).

(1) Note. This and indented subclasses include many bank-vault ventilators.

#### 272 **With air pump:**

This subclass is indented under subclass 271. Subject matter comprising an air moving apparatus for forcing air to or from the ventilated space.

#### 273 **Having adjustable valve:**

This subclass is indented under subclass 271. Subject matter comprising a positively repositionable device for regulating the quantity of airflow through the casing in the barrier.

#### 274 **Sliding or axially moveable:**

This subclass is indented under subclass 273. Subject matter wherein the regulating means (1) relocates along a path parallel to a general direction of airflow immediately prior to its contact with the means or (2) comprises a portion which translates along another portion of the means.

(1) Note. Regarding (2), above, the airflow regulating means usually comprises two adjacent surface elements each having a group of holes therethrough, wherein the two elements translate relative to one

another to vary airflow by bringing the groups of holes into and out of alignment with one another.

#### 275 **Including specific cover or shield for exterior vent opening:**

This subclass is indented under subclass 254. Subject matter wherein particular significance is attributed to a means positioned over an outdoor aperture of an air passage leading to a (ventilated) space so as to protect the air passage.

(1) Note. The means usually acts to protect the passage from rain or outside debris.

(2) Note. A cover or shield not inherent to the structure of the ventilating means (e.g., a building roof overhang) is not included under this definition.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

4+, for a cap closure for a chimney or stacktop.

94, for a railcar, bus, or trailer having an exterior cap closure for a vent.

347+, for an outlet airway having an air pump and which may include a readily moveable cover.

355, for an outlet airway having an air pump and including a moveable access cover.

356, for an outlet airway having an air pump and including an exterior neck with an enlarged, weather resistant cover.

358+, for other outlet airways which may include a readily moveable cover.

367+, for other outlet airways with a specific cover or shield for an exterior vent opening.

#### 276 **Wall type:**

This subclass is indented under subclass 275. Subject matter wherein the means is located in a generally planar surface which extends vertically, i.e., parallel to the force of gravity.

#### 277 **Louver:**

This subclass is indented under subclass 276. Subject matter including a plurality of generally parallel or concentric slats or slat portions

lying within a plane and spaced apart to form an air passageway therebetween.

- (1) Note. The dimension of a slat parallel to the direction of air flowing past it must be larger than its overall thickness to be considered a louver slat. Unless it is claimed in combination with, or as part of louver slats or slat portions, wired mesh or a plate with a mere plurality of holes is not considered to be a louver by itself.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.
- 224, for other window ventilators including louvers.
- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.
- 265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.
- 288, for a baseboard-type inlet airway which may include louvers.
- 290, for a floor-type inlet airway which may include louvers.
- 299+, for a ceiling-type inlet airway which may include louvers.
- 309+, for a wall-type inlet airway which includes a louvered air distributor.
- 325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.
- 335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.
- 347+, for an outlet airway including an air pump which may have air regulating louvers.
- 358+, for other outlet airways which may have air regulating louvers.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.

- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See Class 160, Class Definition, for Panel units made up of plural strips, slats, etc.

- 312, Supports: Cabinet Structure, particularly subclasses 213 and 236 for cabinets having ventilating features.

#### 278 **Having moveable vanes:**

This subclass is indented under subclass 277. Subject matter comprising means for relocating the slats or slat portions either (1) individually or (2) simultaneously or (3) as a unit along with supporting structure therefore.

- (1) Note. A means for relocating the slats or slat portions which merely involves permanently deforming the slats is not included in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 313+, for an air distributor having a moveable louver.

#### 279 **Having serially aligned vane sets:**

This subclass is indented under subclass 277. Subject matter comprising two groups of slats or slat portions which act on contact airflow through the device one after another, i.e., sequentially.

#### 280 **Formed in sheet member:**

This subclass is indented under subclass 277. Subject matter comprising a single plate element having two or more ventilating air passages therethrough.

#### 281 **Having specific vane supporting means:**

This subclass is indented under subclass 277. Subject matter wherein particular significance is attributed to means for directly contacting and holding one of the slats in position.

- (1) Note. Specific vane supporting means must be claimed for inclusion in this subclass. A mere "means for mounting a louver slat" is not sufficient for inclusion in this subclass.

- (2) Note. A specific supporting means for attaching one slat to an adjacent slat is included in this subclass.
- 282 In between vane ends:**  
This subclass is indented under subclass 281. Subject matter comprising means located intermediate the lengthwise extremities of one of the vane-like strips or strip portions which holds the strip or strip portion in position.
- (1) Note. The supporting means may connect a strip or strip portion with a louver framing member or with an adjoining strip or strip portion.
- 283 With screen mounting means:**  
This subclass is indented under subclass 277. Subject matter comprising means to hold in position a mesh-like element through which the air flows.
- 284 Including specific air distributor (e.g., register, etc.):**  
This subclass is indented under subclass 254. Subject matter comprising particular means for directing the air as it enters the ventilated space.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 108+, for railcars, buses, or trailers having specific air distributors.  
152+, for other types of vehicles having specific air distributors.  
185+, for hollow partitions which may disclose specific air distributors.  
270+, for a sleeved vent in a ceiling, wall, or floor.
- SEE OR SEARCH CLASS:
- 34, Drying and Gas or Vapor Contact With Solids, particularly subclasses 222, 229, and 231 for houses, kilns, and containers of that type having gas or vapor distributors.
- 285 Sweeping type:**  
This subclass is indented under subclass 284. Subject matter comprising means for guiding the air along a regularly changing directional path.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 125, for a sweeping-type vehicle window defroster.  
153, for a sweeping-type ventilating air distributor in a vehicle.
- 286 Having airway joint with ball or cylinder rotatable in a socket:**  
This subclass is indented under subclass 284. Subject matter wherein the air directing means has a hollow, air passing connection consisting of an inner member having a spherical or circular, tube shaped (i.e., cylindrical surface) portion located in an outer mating cavity member to permit rotating movement therebetween in plural directions.
- (1) Note. The socket portion may not be spherical or cylindrical.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 154, for a vehicle inlet airway having a swiveling nozzle air distributor which may be of the ball and socket type.  
316, for a repositionable set of air distributing louvers and for louvers mounted in a nonairpassing or a nonsupporting ball or cylinder.  
317, for rotating disk-type air distributing inlet louvers.
- 287 Baseboard type:**  
This subclass is indented under subclass 284. Subject matter wherein the air directing means is located at the juncture of an interior, side structural barrier (i.e., wall) and an interior, bottom structural barrier (i.e., floor) of the ventilated space.
- (1) Note. This subclass includes a floor-type air distributor having a hood above the floor for directing the air laterally.
- 288 Including portion or element movable during normal use:**  
This subclass is indented under subclass 287. Subject matter wherein the air directing means has a part or component capable of motion under usual operating conditions.

- (1) Note. A movable portion or element which only moves during installation of the ventilator, but not subsequently, is not considered proper for this subclass. A readily repositionable portion or element which is bodily movable (e.g., louver vanes or a cover plate) without the use of a special tool (e.g., a screwdriver) is proper for this subclass since this is part of its normal intended use.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 333+, for an inlet airway with an adjustable valve.  
338, for an inlet airway wherein the movable portion or element is an air pump or is combined with an air pump.

## **289 Floor type:**

This subclass is indented under subclass 284. Subject matter wherein the air directing means is located on or in an interior, bottom structural barrier of the ventilated space (i.e., floor).

- (1) Note. This and indented subclasses do not include a floor-type air distributor having a hood above the floor for directing the air laterally.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 287+, for a floor-type air distributor having a hood above the floor for directing the air laterally.

## **290 Having adjustable valve:**

This subclass is indented under subclass 289. Subject matter comprising a positively repositionable device for regulating the quantity of airflow.

## **291 With means for liquid contact:**

This subclass is indented under subclass 289. Subject matter comprising means for directly exposing the air to water or another liquid.

- (1) Note. Dehumidifying means are not considered to be means for liquid contact.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 110, for a railcar, bus, or trailer in which the inlet air is exposed to a liquid.  
157, for other vehicles in which the inlet air is exposed to a liquid.  
223, for a window ventilator having an air passage between the sill and the bottom of the sash in which the air is exposed to a liquid.  
328, for other types of registers in a building where the inlet air is exposed to a liquid.  
337, for inlet airways for static structures, in general, (e.g., buildings) where the inlet air is exposed to a liquid.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 313 for air moistening attachments for stovepipes and subclass 508 for a fireplace with a room humidifier.  
159, Concentrating Evaporators, subclass 5 for concentrating evaporators designed to evaporate a liquid in film or thin layer form.  
237, Heating Systems, subclasses 78+ for air moistening devices used in heating systems.  
239, Fluid Sprinkling, Spraying, and Diffusing, for slow diffusers.  
261, Gas and Liquid Contact Apparatus, appropriate subclasses for air moistening devices, per se, and subclasses 127+ for heating and cooling devices combined with moisteners for the air. Devices including significant ventilating structure and excluding specific heating or cooling structure will be found in this Class (454).  
312, Supports: Cabinet Structure, subclasses 31+ for gas or vapor treatment of material contained within a cabinet structure.

## **292 Ceiling type:**

This subclass is indented under subclass 284. Subject matter wherein the air directing means is located on or in an interior, top structural barrier of the ventilated space.



- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
 306, for an air duct extending into the room and often suspended from the ceiling.
- 293 With light fixture:**  
 This subclass is indented under subclass 292. Subject matter wherein the air directing means is combined with an illuminating device.
- 294 Air passes over lamp:**  
 This subclass is indented under subclass 293. Subject matter wherein the air flows over and contacts a source of illumination associated with the illuminating device.
- 295 Having adjustable valve:**  
 This subclass is indented under subclass 293. Subject matter wherein the air directing means includes a positively repositionable means for regulating the airflow quantity.
- (1) Note. Opening or closing of an airflow quantity regulating means by air pressure alone is not considered to be positive repositioning thereof.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
 311, for an inlet air distributor having a louver with concentric vanes and separate, adjustable internal damper.  
 333+, for other types of inlet airways with adjustable valves.
- 296 Including perforated or porous element:**  
 This subclass is indented under subclass 292. Subject matter wherein the air directing means includes a component either (1) having a plurality of air passing holes cut or formed in it or (2) formed from an air permeable material.
- (1) Note. While the panel need not be in a single plane (e.g., it may undulate), the holes themselves, when formed or cut, do not extend beyond the surface of the surrounding panel taken as a whole. For example, they do not form nor do they support projecting nozzles or form louvers with projecting air directing slat portions which are above the adjacent panel surface.
- 297 Having portion or element movable during normal use:**  
 This subclass is indented under subclass 296. Subject matter wherein the air directing means has a part capable of motion under usual operating conditions.
- (1) Note. A movable portion which only moves during installation of the ventilator, but not subsequently, is not considered proper for this subclass. A readily repositionable portion or element which is bodily movable (e.g., louver vanes or a cover plate) without the use of a special tool (e.g., a screwdriver) is proper for this subclass since this is part of its normal intended use.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
 333+, for an inlet airway with an adjustable valve.  
 338, for an inlet airway wherein the movable portion or element is an air pump or is combined with an air pump.
- 298 Axially movable or sliding valve:**  
 This subclass is indented under subclass 297. Subject matter comprising a means for regulating the quantity of airflow wherein the means (1) relocates along a path parallel to a general direction of airflow immediately prior to its contact with the means or (2) translates along another portion of the means.
- (1) Note. Regarding (2), above, the airflow altering means usually comprises two adjacent surface elements each having a group of holes therethrough, wherein the two elements translate relative to one another to vary airflow by bringing the groups of holes into and out of alignment with one another.
- 299 Including plural vanes:**  
 This subclass is indented under subclass 292. Subject matter wherein the air directing means includes a plurality of air guiding slats or slat-like portions.
- (1) Note. The portions may be integral with or separately attached to the rest of the air directing means.

- (2) Note. The dimension of the slats or slat-like portions parallel to the direction of air flow past them must be larger than the overall thickness of the slat or slat-like portion.
- (3) Note. Cooperation of the vane structure with a ceiling must be claimed for proper original patent placement hereunder.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.
- 224, for other window ventilators including louvers.
- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.
- 265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.
- 277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.
- 288, for a baseboard-type inlet airway which may include louvers.
- 290, for a floor-type inlet airway which may include louvers.
- 309+, for a wall-type inlet airway which includes a louvered air distributor.
- 325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.
- 335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.
- 347+, for an outlet airway including an air pump which may have air regulating louvers.
- 358+, for other outlet airways which may have air regulating louvers.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.

- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See Class 160, Class Definition, for Panel units made up of plural strips, slats, etc.

### 300

#### **Concentric:**

This subclass is indented under subclass 299. Subject matter wherein the slats or slat-like portions of the air directing means are located parallel to and nested within one another.

- (1) Note. The concentric vanes need not be nested in the same general plane.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 310+, for concentric inlet air distributing louvers where the cooperation with the ceiling is not claimed.

### 301

#### **Including elongated output slot:**

This subclass is indented under subclass 292. Subject matter wherein the air directing means includes or forms an oblong airway opening for admitting the air into the chamber.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 296+, for a ceiling-type air distributor often having elongated perforation or porous openings.
- 299+, for a ceiling-type air distributor having elongated slots formed between plural vanes.

### 302

#### **Single, annular output slot:**

This subclass is indented under subclass 301. Subject matter wherein the oblong airway opening is in the shape of a lone, closed ring.

- (1) Note. The ring need not be circular to be considered annular.

### 303

#### **Having portion or element movable during normal use:**

This subclass is indented under subclass 301. Subject matter wherein the air directing means has a part or component capable of motion under usual operating conditions.

- (1) Note. A movable portion or element which only moves during installation of the ventilator, but not subsequently, is not considered proper for this subclass. A readily repositionable portion or element which is bodily movable (e.g., a cover plate) without the use of a special tool (e.g., a screwdriver) is proper for this subclass since this is part of its normal intended use.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 333+, for an inlet airway with an adjustable valve.  
338, for an inlet airway wherein the movable portion or element is an air pump or is combined with an air pump.

**304 Pivoted:**

This subclass is indented under subclass 303. Subject matter wherein the part or component capable of motion swings about a fixed axis region which is parallel to or within a major surface area of the part or component.

**305 Air nozzle:**

This subclass is indented under subclass 284. Subject matter wherein the air directing means includes a projecting, air concentrating spout with an air passageway therethrough.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 263+, for nozzle used in mixing air for an inlet airway.  
296+, for a perforated or porous plate ceiling-type diffuser.  
306, for an air distributor having an air duct extending into a room.

**306 Having air duct extending into room:**

This subclass is indented under subclass 284. Subject matter wherein the air directing means includes an elongated tubular air passageway projecting through a barrier and into the ventilated space.

- (1) Note. The extended air duct may subsequently pass out of the room.

- (2) Note. This subclass includes many inlet ventilation means combined with furniture.

**307 Having air deflecting wall extending into room:**

This subclass is indented under subclass 284. Subject matter wherein the air directing means comprises an air guiding panel or surface structure which projects into the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 215, for a wall for upwardly deflecting inlet air which wall is sloped or can be readily sloped downward from the window.  
216+, for a window ventilator including a wall for upwardly deflecting inlet air.  
221, for a window having a panel comprising parallel or concentric air guiding slats which upwardly deflects inlet air.  
306, for an inlet airway having an air duct extending into a room.

**308 Having vanes or elongated output slots extending radially:**

This subclass is indented under subclass 284. Subject matter wherein the air directing means comprises a plurality of slats, slat portions, or oblong airway openings which radiate away from a common center.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 274, for wall-type thimbles with sliding valves, many of which have radially extending output slots.

**309 Louvered air distributor:**

This subclass is indented under subclass 284. Subject matter wherein the air directing means includes a plurality of generally parallel or concentric slats, or slat portions spaced apart to form an air passageway therebetween.

- (1) Note. The dimension of the slats parallel to the direction of air flow past them must be larger than the overall thickness of the slat to be considered a louver slat.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.
- 224, for other window ventilators including louvers.
- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.
- 265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.
- 277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.
- 288, for a baseboard-type inlet airway which may include louvers.
- 290, for a floor-type inlet airway which may include louvers.
- 299+, for a ceiling-type inlet airway which may include louvers.
- 325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.
- 335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.
- 347+, for an outlet airway including an air pump which may have air regulating louvers.
- 358+, for other outlet airways which may have air regulating louvers.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.
- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See Class 160, Class Definition, for Panel units made up of plural strips, slats, etc.

### 310 Concentric:

This subclass is indented under subclass 309. Subject matter wherein the slats or slat portions of the air directing means are located parallel to and nest within one another.

- (1) Note. The concentric vanes need not be nested in the same general plane.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 300, for concentric air distributing vanes cooperating with a claimed ceiling air distributor.

### 311 Having separate, adjustable internal damper:

This subclass is indented under subclass 310. Subject matter wherein the air directing means includes, in addition to the slats or slat-like portions, a positively repositionable, air permitting or preventing inner body which is configured such that it remains completely within the confines of the air directing means in all of its positions.

- (1) Note. Opening or closing of a damper by air pressure alone is not considered to be positive repositioning thereof.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 295, for an inlet ceiling-type air distributor and light having an adjustable valve.
- 312, for an inlet airway with concentric air distributing vanes and an adjustable vane for directing the air.
- 333+, for an inlet airway having an adjustable valve.

### 312 Having adjustable vane:

This subclass is indented under subclass 310. Subject matter wherein at least one of the slats or slat-like portions is positively repositionable.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 311, for a separate, adjustable internal damper in addition to the vanes.

**313 Moveable:**

This subclass is indented under subclass 309. Subject matter wherein the slats or slat portions of the air directing means are nondeformably relocatable either (1) individually or (2) simultaneously or (3) as a unit along with supporting structure therefore.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

333+, for an inlet airway with an adjustable valve.

**314 Aligned multiple, movable sets of vanes:**

This subclass is indented under subclass 313. Subject matter wherein at least two groups of relocatable slats or slat portions direct the air along the same general pathway.

**315 Serially arranged sets:**

This subclass is indented under subclass 314. Subject matter wherein one of the groups of relocatable slats or slat portions is located completely behind the other group in the direction of airflow.

**316 Repositionable set:**

This subclass is indented under subclass 313. Subject matter wherein the slats or slat portions are relocatable as a unit along with supporting structure therefore.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

286, for an air distributor having an airway joint with a ball or cylinder rotatable in a socket.

**317 Rotating disks:**

This subclass is indented under subclass 313. Subject matter wherein the relocatable slats or slat portion are round planar members which revolve about an axis transverse to the planes of the members.

**318 Louver vanes form valve:**

This subclass is indented under subclass 313. Subject matter wherein the relocatable slats or slat portions themselves form a means for regulating the quantity of airflow.

**319 Plural vanes pivoting about individual axes:**

This subclass is indented under subclass 313. Subject matter wherein the relocatable slats or slat portions each rotate about separate axes.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

318, for an air distributor having plural louver vanes which themselves form a valve.

**320 Pivot at leading or trailing vane edge:**

This subclass is indented under subclass 319. Subject matter wherein at least one of the separate axes is at the forward or rearward extreme of a slat or slat portion as viewed in the direction of airflow.

**321 In housing within room:**

This subclass is indented under subclass 309. Subject matter wherein the slats or slat portions are part of an enclosure which is positioned substantially inside the ventilated space.

(1) Note. A register located within a ceiling, floor, or wall which includes a portion which projects into the ventilated space is not included in this subclass.

**322 With adjustable valve:**

This subclass is indented under subclass 284. Subject matter which includes, in addition to the air directing means, a positively repositionable means for regulating the airflow quantity.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

273+, for an inlet airway including an independent vent sleeve in a ceiling, wall, or floor which contains an adjustable valve.

307, for an adjustable air distributing valve comprising an air deflecting wall extending into a ventilated space.

318, for an air distributor having movable louver vanes which form an adjustable valve.

333+, for an inlet airway adjustable valve not associated with a means for guiding inlet air immediately into the ventilated space.

**323 Axially movable:**

This subclass is indented under subclass 322. Subject matter wherein the positively repositionable airflow regulating means relocates along a path parallel to a general direction of airflow immediately prior to its contact with the means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

274, for an independent vent sleeve in a ceiling, wall, or floor which contains an axially movable valve.

**324 Sliding:**

This subclass is indented under subclass 322. Subject matter wherein a portion of the positively repositionable airflow regulating means translates along another portion of the means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

274, for an independent vent sleeve in a ceiling, wall, or floor which contains a sliding valve.

**325 Plural blades pivoting along parallel axes:**

This subclass is indented under subclass 322. Subject matter wherein the airflow regulating means comprises at least two slats or panels rotating about axes extending parallel to one another.

(1) Note. Subject matter including plural blades pivoting along coincident axes is included in this subclass.

(2) Note. This subclass includes subject matter pertaining to a single pivoting blade structure wherein the blade is disclosed as being one of a plurality which pivot along parallel axes.

SEE OR SEARCH THIS CLASS, SUBCLASS:

221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.

224, for other window ventilators including louvers.

264, for an inlet airway including structure for mixing plural air streams together

which has a shaped nozzle and includes louvers.

265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.

277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.

288, for a baseboard-type inlet airway which may include louvers.

290, for a floor-type inlet airway which may include louvers.

299+, for a ceiling-type inlet airway which may include louvers.

309+, for a wall-type inlet airway which includes a louvered air distributor.

335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.

347+, for an outlet airway including an air pump which may have air regulating louvers.

358+, for other outlet airways which may have air regulating louvers.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.

160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See Class 160, Class Definition, for Panel units made up of plural strips, slats, etc.

**326 Adjacent blades pivot in opposing directions:**

This subclass is indented under subclass 325. Subject matter wherein the two slats or panels are positioned next to another and wherein the slats or panels rotate about their axes in opposite directions.

**327 Valve opens by pivoting in upstream direction:**

This subclass is indented under subclass 322. Subject matter wherein the air regulating means comprises an element which opens by

rotating about a fixed axis toward the source of the air being admitted to the ventilated space.

- (1) Note. This device is often referred to as an inward pivoted valve and usually is composed of a pivoting blade or panel.

**328 With Means for liquid contact:**

This subclass is indented under subclass 284. Subject matter comprising means for directly exposing the air to water or another liquid.

- (1) Note. Dehumidifying means are not considered to be means for liquid contact.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 110, for a railcar, bus, or trailer in which the inlet air is exposed to a liquid.
- 157, for other vehicles in which the inlet air is exposed to a liquid.
- 223, for a window ventilator having an air passage between the sill and the bottom of the sash in which the air is exposed to a liquid.
- 291, for a floor-type register in a building where the inlet air is exposed to a liquid.
- 337, for inlet airways for static structures, in general, (e.g., buildings) where the inlet air is exposed to a liquid.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 313 for air moistening attachments for stovepipes and subclass 508 for a fireplace with a room humidifier.
- 159, Concentrating Evaporators, subclass 5 for concentrating evaporators designed to evaporate a liquid in film or thin layer form.
- 237, Heating Systems, subclasses 78+ for air moistening devices used in heating systems.
- 239, Fluid Sprinkling, Spraying, and Diffusing, for slow diffusers.
- 261, Gas and Liquid Contact Apparatus, appropriate subclasses for air moistening devices, per se, and subclasses 127+ for heating and cooling devices combined with moisteners for the air. Devices including significant ventilating structure and excluding specific

heating or cooling structure will be found in this Class 454.

- 312, Supports: Cabinet Structure, subclasses 31+ for gas or vapor treatment of material contained within a cabinet structure.

**329 With air pump:**

This subclass is indented under subclass 284. Subject matter wherein the air admitting means includes an air moving apparatus for forcing the air into the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 269, for an inlet airway having an air pump and structure for mixing plural air-streams together.
- 272, for an independent vent sleeve in a ceiling, wall, or floor which includes an air pump.

**330 Having register box, frame, or grating:**

This subclass is indented under subclass 284. Subject matter comprising a casing, support, or grill-like exit structure for a means which releases or directs the air immediately into the ventilated space.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 270+, for a sleeved vent in a ceiling, wall, or floor.

**331 Including specific grating or grating mounting structure:**

This subclass is indented under subclass 330. Subject matter wherein particular significance is attributed to (1) a grill-like exit structure or (2) a means for attaching a grill-like exit structure directly to a support.

**332 Readily moveable grating:**

This subclass is indented under subclass 331. Subject matter wherein the grill-like exit structure and accompanying support are easily repositioned relative to one another.

- (1) Note. A grill-like exit structure which requires a tool such as a screwdriver to reposition it relative to an accompanying support is not included in this subclass.

**333 With adjustable valve (e.g., damper, etc.):**

This subclass is indented under subclass 254. Subject matter wherein the air directing means includes a positively repositionable means for regulating the airflow quantity.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and may include an adjustable valve.
- 265+, for other inlet airways which include structure for mixing plural air streams together and which may include an adjustable valve.
- 273+, for an inlet airway including an independent vent sleeve in a ceiling, wall, or floor which contains an adjustable valve.
- 288, for a baseboard-type air distributor which may include an adjustable valve.
- 290, for a floor mounted air distributor having an adjustable valve.
- 297+, for a ceiling-type air distributor including a perforated or porous element and an adjustable valve.
- 303+, for a ceiling-type air distributor including an elongated output slot and an adjustable valve.
- 318, for an air distributor having movable louver vanes which form an adjustable valve.
- 307, for an adjustable air distributing valve comprising an air deflecting wall extending into a ventilated space.
- 311, for an air distributor having concentric louvers and a separate, adjustable internal damper.
- 312, for an air distributor having adjustable, concentric, louver vanes.
- 313+, for a louvered air distributor having moveable louvers.
- 322+, for an adjustable valve associated with a means for distributing inlet air immediately into the ventilated space.

**334 Axially movable or sliding:**

This subclass is indented under subclass 333. wherein the air regulating means (1) relocates along a path parallel to the direction of the air immediately prior to its contact with the means

or (2) contains a portion which translates along another portion of the means.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 274, for an independent vent sleeve in a ceiling, wall, or floor which contains an adjustable, axially movable or sliding valve.
- 323, for an air distributor with an axially movable, adjustable valve.
- 324, for an air distributor with a sliding, adjustable valve.

**335 Plural blades pivoting along parallel axes:**

This subclass is indented under subclass 333. Subject matter wherein the airflow regulating means comprises at least two slats or panels rotating about axes extending parallel to one another.

- (1) Note. Subject matter including plural blades pivoting along coincident axes is included in this subclass.
- (2) Note. This subclass includes subject matter pertaining to a single pivoting blade structure wherein the blade is disclosed as being one of a plurality which pivot along parallel axes.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.
- 224, for other window ventilators including louvers.
- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.
- 265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.
- 277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.
- 288, for a baseboard-type inlet airway which may include louvers.
- 290, for a floor-type inlet airway which may include louvers.



- 299+, for a ceiling-type inlet airway which may include louvers.
- 309+, for a wall-type inlet airway which includes a louvered air distributor.
- 325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.
- 347+, for an outlet airway including an air pump which may have air regulating louvers.
- 358+, for other outlet airways which may have air regulating louvers.

## SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.
- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See Class 160, Class Definition, for Panel units made up of plural strips, slats, etc.

**336 Adjacent blades pivot in opposing directions:**

This subclass is indented under subclass 335. Subject matter wherein the two slats or panels are positioned next to one another and wherein the slats or panels rotate about their axes in opposite directions.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 326, for an air distributor with an adjustable valve having adjacent blades pivoting along parallel axes.

**337 With means for liquid contact:**

This subclass is indented under subclass 254. Subject matter comprising means for directly exposing the airflow to water or another liquid.

- (1) Note. Dehumidifying means are not considered to be means for liquid contact.

## SEE OR SEARCH THIS CLASS, SUBCLASS:

- 110, for a railcar, bus, or trailer in which the inlet air is exposed to a liquid.

- 157, for other vehicles in which the inlet air is exposed to a liquid.
- 223, for a window ventilator having an air passage between the sill and the bottom of the sash in which the air is exposed to a liquid.
- 291, for a floor-type register in a building where the inlet air is exposed to a liquid.
- 328, for other types of registers in a building where the inlet air is exposed to a liquid.

## SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 313 for air moistening attachments for stovepipes and subclass 508 for a fireplace with a room humidifier.
- 159, Concentrating Evaporators, subclass 5 for concentrating evaporators designed to evaporate a liquid in film or thin layer form.
- 237, Heating Systems, subclasses 78+ for air moistening devices used in heating systems.
- 239, Fluid Sprinkling, Spraying, and Diffusing, for slow diffusers.
- 261, Gas and Liquid Contact Apparatus, appropriate subclasses for air moistening devices, per se, and subclasses 127+ for heating and cooling devices combined with moisteners for the air. Devices including significant ventilating structure and excluding specific heating or cooling structure will be found in this Class 454.
- 312, Supports: Cabinet Structure, subclasses 31+ for gas or vapor treatment of material contained within a cabinet structure.

**338 With air pump:**

This subclass is indented under subclass 254. Subject matter wherein the air admitting means includes an air moving apparatus for forcing the air into the ventilated space.

## SEE OR SEARCH CLASS:

- 181, Acoustics, particularly subclasses 212+ for a fluid-conducting-type sound muffler of a general nature, and see the (1) Note to subclass 212; and subclass 224 for a sound absorbing ventilating duct or curb.

- 415, Rotary Kinetic Fluid Motors or Pumps, appropriate subclasses for a blower, per se.
- 416, Fluid Reaction Surfaces (i.e., Impellers), appropriate subclasses for a fan, per se.
- 417, Pumps, appropriate subclasses for a motor driven blower, per se.
- 339 HAVING OUTLET AIRWAY:**  
This subclass is indented under the class definition. Subject matter having means for exhausting air from a (ventilated) space.
- (1) Note. The ventilated space often comprises but is not limited to a room in a building.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
115+, for a railcar, bus, or trailer having an outlet airway.  
162+, for other types of vehicles having an outlet airway.
- SEE OR SEARCH CLASS:  
4, Baths, Closets, Sinks, and Spittoons, subclasses 209+ for outlet ventilators of that class.
- 340 Pressure regulation:**  
This subclass is indented under subclass 237. Apparatus including means responsive to air conditions either in or outside of an enclosure or the air condition in the supply system for the enclosure to maintain a predetermined pressure in said enclosure and/or a difference in pressure between said enclosure and the outside atmosphere.
- (1) Note. Systems which maintain enclosures under air pressure, but having no air condition responsive automatic controls are in other appropriate subclasses of this class, e.g., those having differential air input and discharge.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
70, for pressure regulation with a vehicle and note the classes referred to under "SEARCH CLASS" for that subclass.
- 238, for pressure regulation of a structure which includes both inlet and outlet airways.
- 255, for pressure regulation of a structure which includes an inlet airway.
- 341 With air pump:**  
This subclass is indented under subclass 339. Subject matter wherein the air exhausting means includes an air moving apparatus for withdrawing the air out of the building.
- SEE OR SEARCH CLASS:  
181, Acoustics, particularly subclasses 212+ for a fluid-conducting-type sound muffler of a general nature and subclass 224 for a sound absorbing ventilating duct or curb.
- 415, Rotary Kinetic Fluid Motors or Pumps, appropriate subclasses for a blower, per se.
- 416, Fluid Reaction Surfaces (i.e., Impellers), appropriate subclasses for a fan, per se.
- 417, Pumps, appropriate subclasses for a motor driven blower, per se.
- 342 And having specific emergency smoke handling structure:**  
This subclass is indented under subclass 341. Subject matter in which significance is attributed to a specific configuration for controlling or dealing with the gaseous emission from a sudden, unexpected fire of a serious nature.
- (1) Note. The specific emergency smoke handling structure must be positively claimed for proper original patent placement in this subclass.
- (2) Note. The claimed presence of a heat sensitive element, e.g., a fusible link, is considered adequate if it is disclosed for causing the ventilator to control or deal with any smoke caused by fire.
- SEE OR SEARCH THIS CLASS, SUBCLASS:  
28, for a chimney or stacktop with air current regulating means which is temperature responsive.  
257, for a building inlet airway including an emergency smoke or fire responsive valve.

- 357, for other building outlet airways having means for controlling or dealing with smoke.
- 369, for fusible release controlled fire dampers.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 287.5 for fusible release dampers for stoves or furnaces.
- 169, Fire Extinguishers, particularly subclasses 42 and 56+ for fire extinguishing apparatus responsive to smoke or fire.

**343 Having specific air pump actuator:**

This subclass is indented under subclass 341. Subject matter in which significance is attributed to a specific activator for causing the air moving apparatus to operate or stop operating.

- (1) Note. Details of the specific activator must be positively claimed for proper original patent placement in this subclass.

SEE OR SEARCH CLASS:

- 236, Automatic Temperature and Humidity Regulation, particularly subclass 49.1 for automatic temperature and humidity regulation of a ventilator.

**344 Pump induces draft in exit duct:**

This subclass is indented under subclass 341. Subject matter wherein the air moving apparatus forces a directed stream of air out of an air withdrawal tube and the exhausting means to create an area of lower air pressure in the tube and thus cause air in the ventilated space to be withdrawn along with the directed stream of air.

- (1) Note. The air in the space is withdrawn by the draft caused by the air pump and its directed stream of air--not through, or by, the air pump alone.

**345 Having plural suction intakes:**

This subclass is indented under subclass 341. Subject matter in which the air is withdrawn from multiple spaced apart locations within the ventilated space.

- (1) Note. The plural suction intakes must be positively claimed for proper original patent placement in this subclass.

**346 Having vibration absorbing or preventing structure:**

This subclass is indented under subclass 341. Subject matter including structure which either (1) takes in without passing on, or (2) prohibits at least part of any rapid, unwanted shaking of the air exhausting means or a support therefore.

- (1) Note. For the line between Class 454 and other classes, see the Search Notes below.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 206, for a window mounted air pump including specific noise inhibiting structure.
- 262, for an inlet airway, including structure for mixing plural airstreams together, which has specific noise inhibiting structure.
- 906, for a cross-reference art collection of ventilating structure combined with noise inhibiting means.

SEE OR SEARCH CLASS:

- 181, Acoustics, appropriate subclasses. Note particularly subclasses 212+ for a fluid-conducting-type sound muffler of a general nature, and see the (1) Note to subclass 212 for the lines to this class (454); and subclass 224 for a sound absorbing ventilating duct.

**347 Having readily movable air regulating louver, damper, or cover:**

This subclass is indented under subclass 341. Subject matter including an easily shiftable air permitting or preventing (1) group of parallel or concentric slats, (2) internal body, or (3) orifice cap or closure.

- (1) Note. A louver, damper, or cover held in a single fixed position by a separate, movable, screw, bolt, or other permanent type, tool actuated fastener is not considered "readily movable".

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 4+, for a cap closure for a chimney or stacktop.
- 94, for a railcar, bus, or trailer having an exterior cap closure for a vent.
- 221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.
- 224, for other window ventilators including louvers.
- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.
- 265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.
- 275, for an inlet airway having a specific cover or shield for an exterior vent opening.
- 277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.
- 288, for a baseboard-type inlet airway which may include louvers.
- 290, for a floor-type inlet airway which may include louvers.
- 299+, for a ceiling type inlet airway which may include louvers.
- 309+, for a wall-type inlet airway which includes a louvered air distributor.
- 325+, for an inlet airway including a specific air distributor and additionally a louver which forms an adjustable valve.
- 335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.
- 355, for an outlet airway having an air pump and including a moveable access cover.
- 356, for an outlet airway having an air pump and including an exterior neck with an enlarged, weather resistant cover.
- 358+, for other outlet airways having a readily movable louver, damper, or cover.
- 367+, for other outlet airways having a specific cover or shield for an exterior vent opening.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.
- 126, Stoves and Furnaces, subclasses 285+ for miscellaneous dampers not otherwise classifiable.
- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See Class 160, class definition, for Panel units made up of plural strips, slats, etc.

**348 Continuously horizontal damper panel:**

This subclass is indented under subclass 347. Subject matter comprising an easily shiftable, air permitting or preventing inner body having an air engaging and controlling plate which is always maintained in a position parallel to the horizon while motion is being imparted to it and while it is being used.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 29, for chimneytop or stacktop structure having a continuously horizontal damper panel which is readily movable to regulate an air current.

**349 Ceiling mounted air pump:**

This subclass is indented under subclass 347. Subject matter wherein the air exhausting means is supported by and withdraws air through an interior, top structural barrier of the ventilated space.

**350 Wall mounted air pump:**

This subclass is indented under subclass 347. Subject matter wherein the air exhausting means is supported by and withdraws air through an interior, side structural barrier of the ventilated space.

**351 Plural damper panels:**

This subclass is indented under subclass 350. Subject matter comprising an easily shiftable air permitting or preventing inner body having

two or more air engaging and controlling plates.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 6, for plural pivoted chimney or stacktop closures.
- 31, for plural pivoted air current regulating means in a chimney or stacktop structure.
- 352, for plural damper panels in an outlet airway.

### 352 **Plural damper panels:**

This subclass is indented under subclass 347. Subject matter comprising an easily shiftable air permitting or preventing inner body having two or more air engaging and controlling plates.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 6, for plural pivoted chimney or stacktop closures.
- 31, for plural pivoted air current regulating means in a chimney or stacktop structure.
- 351, for plural damper panels in a wall mounted outlet airway.

### 353 **Including backdraft preventer:**

This subclass is indented under subclass 347. Subject matter having a means which senses pressure or direction of air flow to or from a ventilated space and which acts to allow air-flow under certain sensed conditions and to obstruct airflow under other sensed conditions.

- (1) Note. The means usually permits flow in one direction along a conduit while blocking flow in an opposite direction.
- (2) Note. This subclass commonly includes valves which open when an air pump is turned on and close when the air pump is turned off.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 3+, for a backdraft preventer incorporated in chimneytop or stacktop structure, particularly subclass 26.

70+, for condition responsive pressure maintenance inside a vehicle which may include a valve.

194, for a blast or shock wave type of backdraft preventer.

227, for a backdraft preventer combined with a window.

238, for pressure regulation of a ventilation system which includes both inlet and outlet airways.

255, for pressure regulation of a ventilation system which includes an inlet airway.

259, for a backdraft preventer and an inlet airway.

340, for pressure regulation of a ventilation system which includes an outlet airway.

359+, for a backdraft preventer for an outlet airway.

### 354 **Ceiling or wall mounted:**

This subclass is indented under subclass 341. Subject matter wherein the air exhausting means is supported by and withdraws the air through either an interior top or a side structural barrier of the ventilated space.

- (1) Note. Ceiling or wall mounted ventilators which are, in addition, mounted to the roof, floor, or other structural barrier of the ventilated space are included herein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

195, for means combined with a door for ventilating a room.

200+, for a ventilator with an air pump combined with a window.

349, for an outlet airway having a readily movable air regulating louver, damper, or cover combined with a ceiling mounted fan.

350+, for an outlet airway having a readily movable air regulating louver, damper, or cover combined with a wall mounted fan.

### 355 **With movable access cover:**

This subclass is indented under subclass 341. Subject matter having a readily shiftable orifice cap or closure portion which provides admittance by a human being to the air exhausting means.

- (1) Note. The movable cover may also be used to affect the flow of air in some instances.
- (2) Note. The specific means for permitting movement of the cover must be claimed for proper original patent placement in this subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 4+, for a cap closure for a chimney or stacktop.
- 94, for a railcar, bus, or trailer having an exterior cap closure for a vent.
- 275, for an inlet airway having a specific cover or shield for an exterior vent opening.
- 347+, for an outlet airway having an air pump and which may include a readily moveable cover.
- 356, for an outlet airway having an air pump and including an exterior neck with an enlarged, weather resistant cover.
- 358+, for other outlet airways which may include a readily moveable cover.
- 367+, for other outlet airways with a specific cover or shield for an exterior vent opening.

**356 Having exterior neck with enlarged, weather resistant cover:**

This subclass is indented under subclass 341. Subject matter wherein the air exhausting means includes an outdoor portion with an upstanding air passage stem connected to an end cap or shelter which (1) has a larger dimension than the stem in a direction transverse to the direction of airflow through an exterior structural barrier, i.e., a wall or roof of the ventilated space and (2) assists in diminishing the deleterious effects of weather conditions.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 4+, for a cap closure for a chimney or stacktop.
- 94, for a railcar, bus, or trailer having an exterior cap closure for a vent.
- 275, for an inlet airway having a specific cover or shield for an exterior vent opening.

- 347+, for an outlet airway having an air pump and which may include a readily moveable cover.
- 355, for an outlet airway having an air pump and including a moveable access cover.
- 358+, for other outlet airways which may include a readily moveable cover.
- 367+, for other outlet airways having a specific cover or shield for an exterior vent opening, particularly subclass 368 for other outlet airways having an exterior neck with an enlarged, weather resistant cover.

**357 Having emergency smoke handling feature:**

This subclass is indented under subclass 339. Subject matter wherein the air exhausting means includes means for controlling or dealing with the gaseous emission from a sudden, unexpected fire of a serious nature.

- (1) Note. The claimed presence of a heat sensitive element, e.g., a fusible link considered adequate if it is disclosed for causing the ventilator to control or deal with any smoke caused by the fire.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 28, for a chimney or stacktop with air current regulating means which is temperature responsive.
- 257, for a building inlet airway including an emergency smoke or fire responsive valve.
- 342, for a building outlet airway including an air pump and having means for controlling or dealing with smoke.
- 369, for fusible release controlled fire dampers.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 287.5 for fusible release dampers for stoves or furnaces.
- 169, Fire Extinguishers, particularly subclasses 42 and 56+ for fire extinguishing apparatus responsive to smoke or fire.

**358 Having readily movable air regulating louver, damper, or cover:**

This subclass is indented under subclass 339. Subject matter wherein the air exhausting means includes an easily shiftable air permitting or preventing (1) group of parallel or concentric slats, (2) internal body, or (3) orifice cap or closure.

- (1) Note. A louver, damper, or cover held in a single fixed position by a separate, movable, screw, bolt, or other permanent type, tool actuated fastener is not considered "readily movable".

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 4+, for a cap closure for a chimney or stacktop.
- 94, for a railcar, bus, or trailer having an exterior cap closure for a vent.
- 221, for a window ventilator having an air passage between the sill and the bottom of the sash which includes louvers.
- 224, for other window ventilators including louvers.
- 264, for an inlet airway including structure for mixing plural air streams together which has a shaped nozzle and includes louvers.
- 265+, for other inlet airways including structure for mixing plural air streams together and which include louvers.
- 275, for an inlet airway having a specific cover or shield for an exterior vent opening.
- 277+, for a wall-type inlet airway including a specific cover or shield for the exterior vent opening and includes louvers.
- 288, for a baseboard-type inlet airway which may include louvers.
- 290, for a floor-type inlet airway which may include louvers.
- 299+, for a ceiling-type inlet airway which may include louvers.
- 309+, for a wall-type inlet airway which includes a louvered air distributor.
- 325+, for an inlet airway including a specific air distributor, and additionally, a louver which forms an adjustable valve.

- 335+, for an inlet airway without a specific air distributor which includes a louver which forms an adjustable valve.
- 347+, for an outlet airway having an air pump and a readily movable louver, damper, or cover.
- 355, for an outlet airway having an air pump and including a moveable access cover.
- 356, for an outlet airway having an air pump and including an exterior neck with an enlarged weather resistant cover.
- 367+, for other outlet airways with a specific cover or shield for an exterior vent opening.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), particularly subclass 473 for a louvered panel and 633 for location of related structures in other classes.
- 126, Stoves and Furnaces, subclasses 285+ for miscellaneous dampers not otherwise classifiable.
- 160, Flexible or Portable Closure, Partition, or Panel, subclasses 140+ for louver devices in which the slats are flexible, or are interconnected to each other for relative movement, or may be accumulated (e.g., venetian blinds). See Class 160, class definition, for Panel units made up of plural strips, slats, etc.

**359 Including backdraft preventer:**

This subclass is indented under subclass 358. Subject matter including a means which senses pressure or direction of airflow to or from a ventilated space and which acts to allow airflow under certain sensed conditions and to obstruct airflow under other sensed conditions.

- (1) Note. The means usually permits flow in one direction along a conduit while blocking flow in an opposite direction.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 3+, for a backdraft preventer incorporated in chimneytop or stacktop structure, particularly subclass 26.

- 70+, for condition responsive pressure maintenance inside a vehicle which may include a valve.
- 194, for a blast or shock wave type of backdraft preventer.
- 227, for a backdraft preventer combined with a window.
- 238, for pressure regulation of a ventilation system which includes both inlet and outlet airways.
- 255, for pressure regulation of a ventilation system which includes an inlet airway.
- 259, for a backdraft preventer and an inlet airway.
- 340, for pressure regulation of a ventilation system which includes an outlet airway.
- 353, for a backdraft preventer and fan for an outlet airway.
- 360 Including counter balancing means:**  
This subclass is indented under subclass 359. Subject matter including a means which mechanically biases the backdraft preventer toward a particular position.
- (1) Note. The backdraft preventer is usually biased to an open or closed position.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
359, for a backdraft preventer biased to a particular position by a naturally occurring force such as gravity.
- 361 Internal damper:**  
This subclass is indented under subclass 358. Subject matter wherein the air exhausting means includes an easily shiftable air permitting or preventing inner body which is configured such that it remains completely within the confines of the air exhausting means in all of its shifted positions.
- 362 Continuously horizontal damper panel:**  
This subclass is indented under subclass 361. Subject matter wherein the air permitting or preventing inner body is an air engaging and controlling plate which is always maintained in a position parallel to the horizon while motion is being imparted to it and while it is being used.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
29, for chimneytop or stacktop structure having a continuously horizontal damper panel which is readily movable to regulate an air current.
- 348, for an outlet airway having an air pump and a continuously horizontal damper panel.
- 363 Pivoted damper panel:**  
This subclass is indented under subclass 361. Subject matter wherein the air permitting or preventing inner body is an air engaging and controlling plate which may be swung about a fixed axis region which is parallel to or within the plane of the plate.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
5, for pivoted chimney or stacktop cap closures.
- 30, for a pivoted outlet air current regulator used in a chimney or stacktop.
- 325+, for pivoted blades used as an internal damper in an inlet airway having a specific air distributor.
- 327, for an internal valve which pivots in an upstream direction included in an inlet airway having a specific air distributor.
- 335+, for other pivoted damper panels used in an inlet airway
- 364 Along roof ridge:**  
This subclass is indented under subclass 358. Subject matter wherein the air exhausting means is formed (1) longitudinally of and (2) for cooperating with or aid in making up a roof crest of two converging, slanted, exterior top structural barriers, i.e., roof surfaces of the ventilated space.
- (1) Note. Roof ridge ventilators which do not have their longest horizontal dimension along the roof ridge are not considered proper for this subclass.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:  
341+, for an outlet airway which may be along a roof ridge and includes an air pump to move the air.



- 365, for a roof ridge ventilator not having a readily movable air regulating louver, damper, or cover.

**365 Along roof ridge:**

This subclass is indented under subclass 339. Subject matter wherein the air exhausting means is formed (1) longitudinally of and (2) for cooperating with or aid in making up a roof crest of two converging, slanted, exterior top structural barriers, i.e., roof surfaces of the ventilated space.

- (1) Note. Roof ridge ventilators which do not have their longest horizontal dimension along the roof ridge are not considered proper for this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 341+, for an outlet airway which may be along a roof ridge and includes an air pump to move the air.  
364, for a roof ridge ventilator having a readily movable air regulating louver, damper, or cover.

**366 Slant roof ventilator:**

This subclass is indented under subclass 339. Subject matter wherein the air exhausting means is specifically adapted to cooperate with a single, sloped surface of an exterior top structural barrier, i.e., a roof of the ventilated space.

- (1) Note. A roof ventilator which is disclosed as being capable of being mounted on a sloped roof but absent any specific claimed feature for cooperating with a sloped roof, e.g., a sloped cap or wall, is not considered proper for original patent placement in this subclass.

**367 Having specific cover or shield for exterior vent opening:**

This subclass is indented under subclass 4560. Subject matter wherein particular significance is attributed to a means positioned over an outdoor aperture of an air passage leading to the ventilated space so as to protect the air passage.

- (1) Note. The means usually acts to protect the passage from rain or outside debris.

- (2) Note. A cover or shield not inherent to the structure of the ventilating means (e.g., a building roof overhang) is not included under this definition.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 4+, for a cap closure for a chimney or stacktop.  
94, for a railcar, bus, or trailer having an exterior cap closure for a vent.  
275, for an inlet airway having a specific cover or shield for an exterior vent opening.  
347+, for an outlet airway having an air pump and which may include a readily moveable cover.  
355, for an outlet airway having an air pump and including a moveable access cover.  
356, for an outlet airway having an air pump and including an exterior neck with an enlarged, weather resistant cover.  
358+, for other outlet airways which may include a readily moveable cover.

**368 Exterior neck with enlarged, weather resistant cover:**

This subclass is indented under subclass 367. Subject matter wherein the air exhausting means includes an outdoor portion with an upstanding air passage stem connected to an end cap or shelter which (1) has a larger dimension than the stem in a direction transverse to the direction of airflow through an exterior structural barrier, i.e., a wall or roof of the ventilated space and (2) assists in diminishing the deleterious effects of weather conditions.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 356, for an outlet airway having an exterior neck with an enlarged, weather resistant cover and an air pump.

**369 FIRE DAMPERS:**

This subclass is indented under the class definition. Subject matter including valve means which act to shut off flow in a ventilating system in the event of a dramatic rise in temperature indicative of a fire.

- (1) Note. These dampers are usually activated by fusible links, a portion of which melts due to the elevated temperatures incurred in a fire.
- (2) Note. Many building codes require the use of fire dampers to prevent the spread of the fire through the ventilating system.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 28, for a chimney or stacktop with air current regulating means which is temperature responsive.
- 257, for a building inlet airway including an emergency smoke or fire responsive valve.
- 342, for a building outlet airway including an air pump and having means for controlling or dealing with smoke.
- 357, for other building outlet airways having means for controlling or dealing with smoke.

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 287.5 for fusible release dampers for stoves or furnaces.
- 169, Fire Extinguishers, particularly subclasses 42 and 56+ for fire extinguishing apparatus responsive to smoke or fire.

**370 MISCELLANEOUS:**

This subclass is indented under the class definition. Subject matter not provided for in the above subclasses.

CROSS-REFERENCE ART COLLECTIONS

**900 VENTILATOR USING SOLAR POWER:**

This subclass is indented under the class definition. Subject matter comprising means using energy from the sun in its operation.

**901 FOG DISPELLER:**

This subclass is indented under the class definition. Subject matter comprising means for eliminating or dispersing cloud-like, condensed water vapor which is positioned close to a ground surface.

SEE OR SEARCH CLASS:

- 239, Fluid Sprinkling, Spraying, and Diffusing, subclass 2.1 for processes of weather control and subclass 14.1 for apparatus used in weather control.
- 516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclass 114 for compositions for or subcombination compositions for or breaking of or inhibiting of continuous gas or vapor phase colloid systems (e.g., fog dispelling, dust suppressing, contrail suppressing), when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

**902 AIR RAID SHELTER VENTILATION:**

This subclass is indented under the class definition. Subject matter comprising means to ventilate a space which is intended to protect its occupants from an attack by hostile military aircraft or missiles.

**903 FLEXIBLE DUCTS USED FOR CARRYING AIR:**

This subclass is indented under the class definition. Subject matter comprising a conduit for guiding air to or from a ventilated space which is constructed to undergo bending, twisting, or turning without breakage.

**904 MAGNETIC MEANS TO HOLD A DAMPER CLOSED:**

This subclass is indented under the class definition. Subject matter comprising a means for permitting or preventing airflow and further comprising means using magnetic force to maintain in position the airflow permitting or preventing means so as to prevent airflow.

**905 BLACK OUT MEANS:**

This subclass is indented under the class definition. Subject matter comprising means for passing air therethrough to or from a ventilated space while blocking the passage of light.

**906 NOISE INHIBITING MEANS:**

This subclass is indented under the class definition. Subject matter comprising means which prevents or deadens unwanted sound.

- (1) Note. For the line between Class 454 and other classes, see the Search Notes below.

- (1) Note. The ventilated space usually is positioned at least partially below ground level.

SEE OR SEARCH THIS CLASS, SUB-CLASS: END

- 206, for a window mounted air pump including specific noise inhibiting structure.
- 262, for an inlet airway, including structure for mixing plural airstreams together, which has specific noise inhibiting structure.
- 346, for an outlet airway having vibration absorbing or preventing structure.

SEE OR SEARCH CLASS:

- 181, Acoustics, appropriate subclasses. Note particularly subclasses 212+ for a fluid-conducting-type sound muffler of a general nature, and see the (1) Note to subclass 212 for lines with this class (454); and subclass 224 for a sound absorbing ventilating duct.

**907 SEAT:**

This subclass is indented under the class definition. Subject matter combined with a means for supporting a person in a sitting position.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 120, for seat structure for ventilating a space in a vehicle.

**908 HAVING ROTARY RETARDER:**

This subclass is indented under the class definition. Subject matter comprising a means in the path of air flowing to or from a ventilated space which is made to revolve about an axis by the airflow.

- (1) Note. The means must revolve at least 360 degrees to be included in this art collection.

**909 RADON PREVENTION:**

This subclass is indented under the class definition. Subject matter comprising means for evacuating or preventing radon from collecting in a ventilated space.